STUDIA OBSZARÓW WIEJSKICH

volume 38

Local development in urban and rural space: project and planning

2015

KOMISJA OBSZARÓW WIEJSKICH PTG
INSTYTUT GEOGRAFII I PRZESTRZENNEGO ZAGOSPODAROWANIA PAN

volume 38 • 2015

STUDIA OBSZARÓW WIEJSKICH

RURAL STUDIES

KOMISJA OBSZARÓW WIEJSKICH
POLSKIE TOWARZYSTWO GEOGRAFICZNE

INSTYTUT GEOGRAFII I PRZESTRZENNEGO ZAGOSPODAROWANIA
POLSKA AKADEMIA NAUK

EDITORIAL OFFICE

00-818 Warszawa, Twarda 51/55
phone (+48 22) 697 88 34 fax (+48 22) 620 62 21
e-mail: b.solon@twarda.pan.pl, www.igipz.pan.pl

RCIN REPOZYTORIUM CYFROWE INSTYTUTÓW NAUKOWYCH

Journal indexed in BazEkon.
Full versions of articles available in IGSO PAS Digital Repository
http://rcin.org.pl

ISSN 1642-4689

Deliever to print in August 2015
Printed by: Invest Druk Renata Barcińska

CONTENTS

7 **Tony SORENSEN**
Antifragility, stable adaptation and future-proofing: redefining the spirit and purpose of regional development strategy in Australia's peripheral regions

19 **Michael SOFER • Ephraim S. GROSSMAN • DAVID GROSSMAN**
The communal and renewed kibbutz: ideology, management and institutional change

39 **Serhiy MOROZ**
Employment in rural areas of Ukraine: tendencies and opportunities

55 **Carmen VÁZQUEZ VARELA • José María MARTÍNEZ NAVARRO**
Participation and management in Protected Natural Areas in Spain: a perspective from social capital and territorial development

77 **Prakash C. TIWARI • Bhagwati JOSHI**
Environmental changes, rural out-migration and social dynamics in Himalayas

97 **Antonín VAISHAR • Milada ŠŤASTNÁ • Kateřina STONAWSKÁ • Jana ŽITŇÁKOVÁ**
Renewable energy for the rural areas: self-sufficiency or a new economic branch?

111 **Maryam ALAEDDINI • David LÓPEZ-CARR**
Why has Iran's family planning policy been so successful? Political, demographic, socio-economic and cultural-geographical underpinnings of a dramatic fertility transition

129 **Bassem NEIFAR**
Local development through self-help: some Tunisian case studies

145 **Ines GRIGORESCU • Bianca MITRICĂ • Irena MOCANU**
Assessing urban sprawl-related housing dynamics in the Romanian metropolitan areas

EDITORIAL

This volume is the product of scholars associated with the activities of the Commission on Local and Regional Development of the International Geographical Union. The Commission's mission is to advance international research, scholarship and knowledge in a variety of domains concerning matters related to local development in the urban and rural space, reorganization of space and the role of both institutions and agencies in developing and reshaping the settled space. In this context the current volume has the aim to disseminate theoretical, conceptual and methodological issues concerning local and regional development, to discuss empirical and policy issues, and to widen the scope of the debate on the topics of "local and regional development" in different national and institutional contexts.

The collection of articles presents a mosaic of case studies that occur in various countries, developed and developing. It covers topics with some emphasis on issues concerning rural transformation and development, regional progress, socio-economic transformation of rural settlements and regions. The major aim of this collection is to understand a wide range of social and economic phenomena in various countries with an attempt to universalize from the micro (local) and the meso (regional) to the global. In other words, and from an opposite angle, the idea is to emphasize some universal concepts that characterize the human settled space, but at the same time to present the local (national) uniqueness and to recognize that in the era of global influences it is not sufficient to base all of our findings and conclusions on the accepted theories. Understanding the phenomenon in each case study requires delving into the local settled landscape, the community residing there, the events that have affected this space over time, and the economic, social and political processes shaping them.

Australia's often fragile, fast-changing and highly diverse rural regions are, compared to many countries, barely shielded by top-down regional policy. In this context, **Sorensen** proposes a somewhat novel approach to rural development, drawing on Taleb's notions of antifragility, in which the task is reconceived as honing local capacity to drive a future-oriented and highly adaptive culture. **Sofer**, E. **Grossman** and D. **Grossman** consider the roles of management and ideology in modifying the sustainability of an Israeli communal system – the planned kibbutz – and the recent processes that have brought about its current transformation. It seems that pragmatism tends to prevail over ideology and communality has difficulties in functioning effectively in a highly complex and changing world.

Moroz's paper reviews the main tendencies and problems of rural employment in Ukraine. It is clear that the issue of rural employment could not be solved without a well-defined integrated rural development policy which assumes a multi-sectoral approach to overcome the existing problems, to stimulate the economic diversity, and to expand non-agricultural activities in the rural space. In the case Castilla-La Mancha region in Spain, **Vázquez Varela** and **Martínez Navarro** assess contexts of legitimacy for the government

and management of the space between agents and institutions. They try to detect the level of territorial identity which the population has with regard to their municipality, natural space and supra-local scales, as well as detecting conflicts concerning environmental, social and economic nature and how to manage them.

In the upper Kosi Catchment, Uttarakhand Himalayas, India, **Tiwari** and **Joshi** are interpreting inter-linkages between environmental changes and rural out-migration and assessing their impacts on quality of life of rural women. The availability of water, fuel-wood and fodder decreased, agricultural production declined and livelihood opportunities were reduced mainly due to depletion of natural resources. Consequently, male out-migration increased and women workload has increased thus threatening their life conditions and health. The Czech team of **Vaishar**, **Šťastná**, **Stonawská** and **Žitňáková** discusses the role of energy production from renewable sources in the rural areas of the South-Moravian region. The problems with the use of water, wind, sun, geothermal and biological sources for the energy production are illustrated, and environmental, technological, economic and social aspects of the matter are discussed.

Since the establishment of Iran's family planning program it has been one of the most successful state programs in the world, having reduced dramatically the national annual growth rate. The paper by **Alaeddini** and **López-Carr** explores international and national legal, institutional, demographic, and cultural-geographical influences that may have contributed to its results. Local development systems using their entrepreneurship to establish an "anti-system" as a response to the system imposed by the Tunisian State are discussed by **Neifar**. This is based on two cases of local development through self-help, the first is based on agricultural resources and activities, and the second is concerned with marine resources. The focus of the paper is on the survival strategies explored and developed by these two communities.

Grigorescu, **Mitrică** and **Mocanu** assess the main urban sprawl-related housing dynamics in the most important Romanian metropolitan areas. Their research is focused on the triggering driving forces in terms of the spatial transformations of built-up areas, changes in population patterns and residential expansion. They seek to provide an insight into the links between the main patterns of change and the residential development pathways in the Romanian metropolitan areas.

We hope that this issue will contribute to a better understanding of the processes, and their underlying mechanisms, taking place in the settled social and economic space and to the appreciation of specific case studies and their multifaceted contribution to the understanding of the meaning of local and regional development.

Michael Sofer, Anthony Sorensen and Konrad Czapiewski

STUDIA OBSZARÓW WIEJSKICH
2015, volume 38, pp. 7–18
http://dx.doi.org/10.7163/SOW.38.1

KOMISJA OBSZARÓW WIEJSKICH
POLSKIE TOWARZYSTWO GEOGRAFICZNE
www.ptg.pan.pl

INSTYTUT GEOGRAFII I PRZESTRZENNEGO ZAGOSPODAROWANIA
POLSKA AKADEMIA NAUK
www.igipz.pan.pl

ANTIFRAGILITY, STABLE ADAPTATION AND FUTURE-PROOFING: REDEFINING THE SPIRIT AND PURPOSE OF REGIONAL DEVELOPMENT STRATEGY IN AUSTRALIA'S PERIPHERAL REGIONS

Tony SORENSEN

University of New England
Armidale, NSW 2351, Australia
Tony.Sorensen@une.edu.au

Abstract: Australia's rural regions typically have fragile and narrow economic bases specializing in agriculture, mining, or leisure and recreation. We canvass the major sources of economic fragility, which is growing fast through global competition, massive technological progress, and many other pressures for change. These severely diminish the capacity of governments to deliver effective top-down and one-size-fits-all regional development strategies. The antidote to fragility resides instead in local self-help strategies designed to increase communities' entrepreneurial, technological, future-oriented, and innovative capacities. Knowledge about optimal delivery of such outcomes in Australia's sparsely settled regions is, however, limited. This suggests an agenda of action research to promote and document local experiences – both successes and failures – in promoting the cultural change necessary to deliver stable adaptation.

Key-words: antifragility, rural Australia, regional development strategy, local self-help, cultural change, stable adaptation

> "*Change before you have to; face reality as it is, not as you wish it to be; control your own destiny or someone else will; if you don't have competitive advantage don't compete; and if the rate of change on the outside exceeds the rate of change on the inside, the end is near.*"
>
> Selected quotes from Jack Welch, former CEO of General Electric

Introduction

Australia's rural economies are, in Taleb's (2012) terms, particularly fragile for reasons we will explore. Fears and expectations engendered by this fragility have in turn underpinned a raft of traditional regional development strategies orchestrated mainly by federal and state governments over the last half century. Such top-down strategies have typically focused on infrastructure provision, hunting and relocating new industries, or attempting to grow new industries *in situ*. Yet all the evidence points to the relative failure of such approaches, and it is arguable that the economic and social trajectories of most regions

differ little from what would have occurred in the absence of policy (Sorensen 2000, 2002). Another focus is therefore to explain this lack of policy impact and, moreover, we shall see that many the causes are becoming more entrenched and intractable. In the light of governments' increasing incapacity to assist specific regions (Sorensen 2002), our attention finally turns towards a slate of possible actions designed to deliver adaptive regional business cultures. These have to be capable of seizing an avalanche of new opportunities raised by burgeoning technologies, fast economic growth in the Pacific region, and economic globalization more widely. This also opens up an enormous future research agenda exploring avenues for regional self-help. But, given the enormous differences in regional resources, infrastructures, and geographical accessibility, optimal strategies are likely to differ greatly in detail from one place to another. As a sub-plot, we also focus on a development environment in many respects far removed from European experience. Australia's relatively open and market-oriented economy located in a somewhat hostile geographical environment promises to become a proving ground for new ideas about steering the development of place and space.

On Regional Fragility

This analysis focuses mainly on regions classified by the Australian Bureau of statistics (ABS) as Outer Regional, Remote and Very Remote, which we will term ORRVRA. Figure 1 shows their spatial distribution across most of the continent, which is roughly the same size as the United States south of the 49th parallel. ORRVRA typically lies 100 km or more beyond Australia's major urban conurbations and offers few opportunities for daily commuting. Thus their economies are largely dominated by primary industries or leisure and recreation. In the case of the author's home region, New England and the North-west of NSW, 16.3% of workers were either in agriculture or mining in 2011. Moreover, ORRVRA's populations are sparse, comprising a little over 2.5 million people, or about 11.4% of Australia's total population of 22.3 million in 2011. Some 2 million people live in Outer Regional Australia, the nation's agricultural heartland, while locations classified as remote are home to just 500,000 inhabitants. To make matters worse, Figure 2 shows that the numbers of people living in many parts of ORRVRA are in decline or at best static. The main exceptions are the booming mineral provinces of northern Australia, which are experiencing one the greatest expansions in human history, and several benign coastal locations.

Sparse and declining populations make it increasingly expensive to provide adequate social and infrastructure services and agricultural, or even mineral, monocultures make for exceedingly narrow economic bases. Throw in oppressive climates where temperatures frequently exceed 40 C, and there are few incentives for people to remain in many rural locations once they retire or become unemployed. They are often low amenity locations (Argent et al. 2013). But fragility has many other much larger and interacting dimensions. For example, rural economies are at the mercy of both fluctuating commodity prices and highly variable seasonal conditions. The value of the Australian dollar is also crucial for both farm and mine incomes. Most prices for agricultural commodities are set via the Chicago Mercantile Exchange and quoted in $US. The London Metal Exchange similarly prices many minerals in £ sterling. After the start of the global financial crisis in 2007–2008, the value of the A$ rose from about US$0.6 to > US$1.0 because Austra-

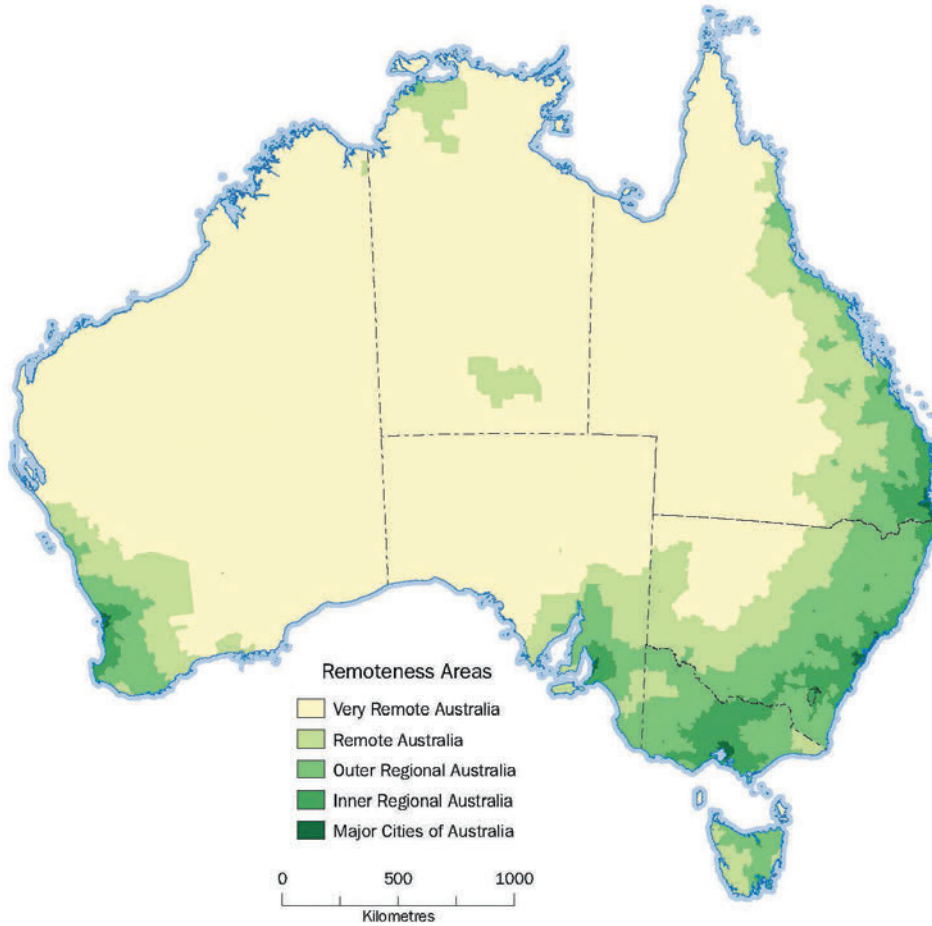


Fig. 1. Australian Bureau of Statistics Remoteness Areas 2011
Source:http://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/2B9F179C6CFA2431CA257B03000D-7F21/$File/1270055005_2011_remoteness_structure_maps.pdf

lia experienced no recession; was running budgetary surpluses; offered high interest on bank deposits; saw rising demand for, and prices of, mineral and agricultural commodities from China and other Asian economies; and attracted large inflows of foreign investment capital. Since Australia exports two-thirds of its agriculture output and nearly all its mineral production, the rising value of the dollar nominally slashed producer incomes by up to 60%. In practice, the losses were less because of rising commodity prices and lower input costs arising from cheaper imports. On the down-side, some agricultural production suffered from rising import competition from lower cost countries – including citrus fruit and pork products. Fluctuating metal and energy prices also sometimes result in the sudden opening or closure of mines, the antidote to which is the development of fly-in / fly-out (FIFO) and drive-in / drive-out (DIDO) cultures (Storey 2001). The resulting economies are almost purely extractive. Once resources are exhausted, all that remains is a hole in the ground and maybe ghost infrastructure.

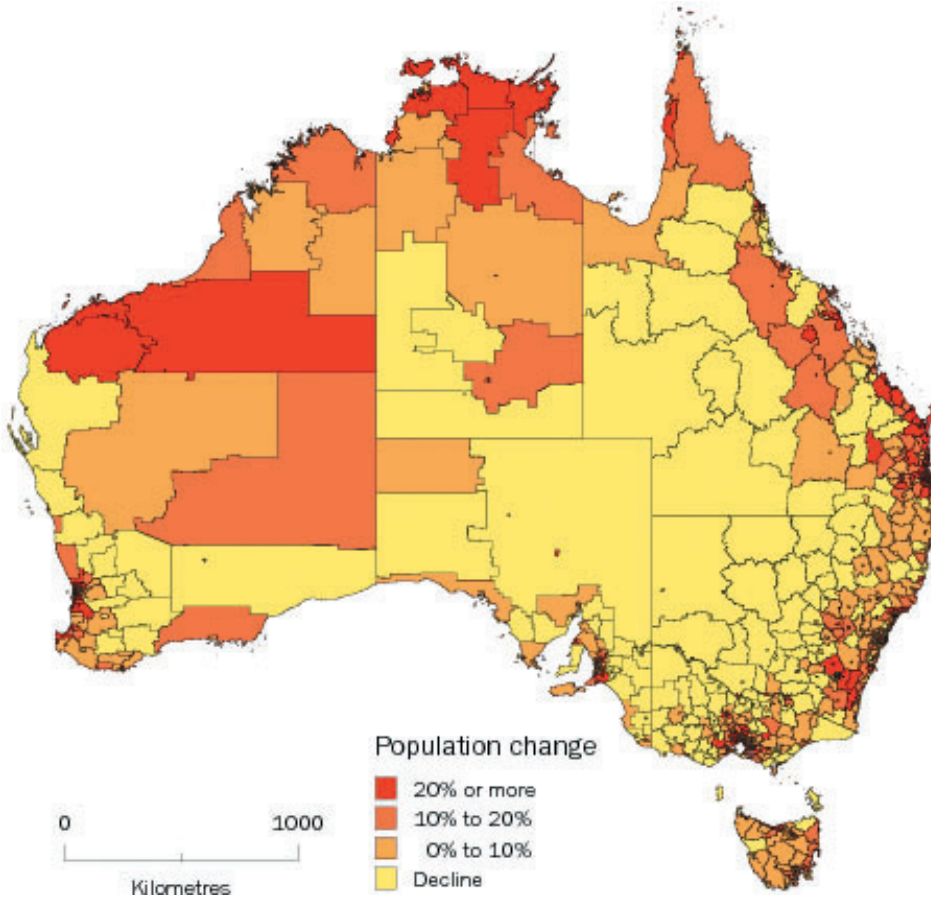


Fig. 2. Australia: Local Government Areas Population Change 2001–2011
Source: http://www.abs.gov.au/ausstats/abs@.nsf/Products/3218.0~2011~Main+Features~Main+Features?OpenDocument#PARALINK0

All these instabilities are, in turn, magnified by massive economic uncertainty of the kinds identified by Taleb (2007) and Sorensen (2009b, 2011b). At a theoretical level, these involve:

1. Economic and social complexity (multitudes of intersecting variables with extensive feedback loops), all made worse by globalization and rapid shifts in spatial patterns of production resulting from dynamic changes of comparative and competitive advantages among nations and regions.
2. Huge information deficiencies about variables and their impacts – in a fast moving and complex world, the information at our disposal is patchy and soon dated.
3. Extreme leveraging of both economic growth and decline in the spirit of chaos theory – witness (a) the growth of the BRIC nations or the collapse of some American cities like Detroit or (b) the sudden collapse of governments.
4. The existence of environmental tipping points, typically leading to the sudden collapse of some agricultural and resource industries.

5. Asynchronous cycles (analogous with quantum mechanics) most economic processes take wave forms such as the business, product, technology, and fashion life-cycles. The chance intersection of these wave cycles across industries and nations as a whole poses nightmares for governors of reserve banks. They have grudgingly acknowledged two speed economies, but the reality might be closer to eight or ten.
6. The prevalence of such destabilizing psychologies like fear & greed, well described by Prechter's (2003) socionomics.
7. Prevalent non-linearities between cause and effect between nearly all system variables (Taleb 2007, 2012).

Table 1. 14 Technology Arenas Likely to Transform Rural Australia's Base Industries: crops / livestock / fisheries / mining & energy / forestry / tourism / retirement

1.	Bio-medical & pharmaceutical
2.	Water management
3.	Genetic engineering
4.	Synthetic materials
5.	ICT
6.	Crowd-sourcing / funding
7.	Expert systems
8.	Sources of energy and their distribution
9.	Sentient robotics, including drones
10.	3-D printing
11.	Data mining / presentation
12.	Aero-space, transport & logistics
13.	Finance & business management
14.	Reconceptualisation of legal frameworks

Source: The Author

To these we might add large-scale corporate malfeasance and/or incompetence, and government mismanagement, which combined to kick-start the current global financial crisis (GFC). Perhaps we should also toss in the corruption of international trade by large producer subsidies or various forms of trade barrier. We're not finished yet, for on the up-side we have a large range of burgeoning technologies (see Table 1) set to transform the economic world in terms of goods and services produced, jobs performed and skills needed, resources and other inputs, the organization of business and financial management, and transport logistics (Brynjolfsson and McAfee 2014; Hammersley 2012). Such authors also note (a) the dramatic decline in the lapse time between pure research and development of commercial products, (b) the ever faster adaptation of existing products to new & unimagined uses, and (c) the rising power of integrating multiple technologies. For example, every supplier of regional producer and consumer services in Australia is potentially threatened with redundancy by e-commerce / e-networking and associated lifestyle changes.

In summary, all these processes are in the process of dramatically changing what is produced where, and by implication where people will live and migrate. Moreover, they

appear largely uncontrollable, especially by regional and national governments which are increasingly subservient to an ultra-competitive multi-polar world order (World Bank 2011). In such an environment, policy is increasingly focusing on forms of macro-economic management designed to create investment friendly financial stability mediated through such intersecting agencies as national reserve banks and prudential regulators and their global counterparts. And governments are increasingly constrained by what one might term a democratic deficit. Simply put the task of having to win elections and retain office against a background of endemic social fragmentation is likely to impede seriously the task of effective policy formation and management. A British study (Savage et al. 2013) reported the existence of seven 'social classes' in that country, not the two or three presumed for most of the 20th century, each determined to defend its perceived interests which rarely have anything to do with adjusting to the inevitable economic realities of the coming world order. In short, most future governments are likely to represent unstable coalitions of interests in which policy deliberations will be time consuming at the precise time that fast action is demanded. Moreover, their resulting policies are likely to be belated and second-best compromises. All the uncertainties documented here suggest that governments now have little or no capacity to steer regional destinies (Sorensen 2000, 2002). Put another way, such incapacity imparts further fragility to Australia's rural regions at the very time they confront an avalanche of new technologies and global competition in an environment where accurate spatial forecasting is nigh-on impossible.

Such fragility has important consequences. Australia's settlement system was completed about 100 years ago, but many small villages have subsequently disappeared and even larger settlements, whose populations lie in the 2,000 to 20,000 range, often struggle to survive. In a heavily market-oriented economy, where agriculture is subsidized only to about 5% of the gross value of production compared with much higher numbers for the US, Europe, and East Asia, farm consolidation has eliminated many small-scale producers and the number of people describing their occupation as farmers is fast collapsing despite strongly rising output. Note also that the forms and extent of fragility will vary spatially and temporally according to such dimensions as the extent and quality of local resources, the extent of global competition, domestic rather than export orientation, local economic diversity, population size and density, and geographical accessibility.

Antidotes to Atrophy and Attrition

Fragility unsurprisingly begets fear among rural populations that their regional lifestyles, wellbeing, and prospects are threatened. For the last 50 years, both state and federal governments in Australia have experimented with disconnected and often sporadic strategies designed to increase regional populations, diversify economic bases, improve production technologies, raise average incomes, and provide residents and businesses with good quality infrastructure and public services. Evidence suggests that the first two of these goals have failed miserably. The population statistics reported above testify to the declining share of national population in rural regions as a whole and the growth of population in mining provinces reflects mineral discovery and exploitation by corporations rather than government endeavor. Strategies for diversification into manufacturing and higher order services also fell afoul of the nation-wide slaughter of manufacturing jobs

by engagement with much cheaper Asian based suppliers, first in Japan, then Korea, and subsequently China, India, Bangladesh and elsewhere. In 1970, the national proportion of workers in manufacturing was 30%, a figure now down to a little over 7%. Several of these themes are addressed by Sorensen (2002) and The Regional Australia Institute (2012)[1].

On the other hand, improvements to infrastructure and services had little to do with formal regional strategies. Those outcomes rested on community services obligations (CSOs) executed by line departments charged with delivering transport, education and health, not formal regional strategy. Extensive government funding of research and development for primary industries also contributed greatly to rising total factor productivity growth and farm incomes, but accelerated farm consolidation and the loss of workers in the industry and their families (Productivity Commission 2005; Sorensen 2009a). Regional development strategies are still in place because rural electorates expect as much, but their share of government funding and of regional economies is derisory and, until recently, governance structures were complex and uncertain (Sorensen et al. 2007).

The issue then becomes: what then can we do to boost regional economic diversity and wealth? In a market economy – and Australia ranks third on the Heritage Foundation's index of global economic freedom[2] – the recipe seems to be nothing short of replicating as closely as possible two interlocking cultures: (1) Taleb's (2012) notion of **optionality** and (2) the entrepreneurial and innovative culture of Silicon Valley[3]. In many respects, this agenda is psychological, as anticipated by Sorensen (2009b, 2010). And, as we will show, this cultural transformation is largely in the hands of local and regional communities' residents, not state and federal government, whose primary roles in both cultures lie much more in providing a stable and investment focused economy while meeting essential CSOs. In a decentralized market economy, this recipe is unlikely to be achievable universally, leaving behind many places unable to muster the necessary resources for their improved well-being or even survival. However, this outcome appears equally likely under both government and market scenarios.

Taleb devised optionality as a key survival and adaptive strategy for SMEs in rapidly changing and highly competitive world. In Australia's rural contexts it seems to apply equally for farmers (who often run SMEs), local service enterprises, community organizations, and local governments – indeed the whole of rural economy and society. In my view, the creation of robust communities is a whole-of community endeavor leading to stable adaptation (Sorensen and Epps 2005) in the sense of keeping up with and responding quickly to the forces of change. Indeed, optionality also works for individuals and this author uses it in running a superannuation fund just as the strategy worked for Taleb when he was a Wall Street trader.

Optionality requires all relevant actors in rural communities, both individually and collectively to:

1. Constantly comb their domains for future options arising from emerging and evolving technologies (or possibly fashions) and/or their adaptation to new uses.

[1] See http://www.regionalaustralia.org.au/wp-content/uploads/2013/07/RAI-Stocktake-of-Regional-Research-50-pieces-of-influential-research.pdf for the Regional Australia Institute's stocktake of regional research including the capacity of government policy to transform regions and the drivers of regional change.

[2] See http://www.heritage.org/index/

[3] Ably documented by in a Startup Genome Report in 2011, which can be sourced at: http://gallery.mailchimp.com/8c534f3b5ad611c0ff8aeccd5/files/Startup_Genome_Report.pdf. This organisation also ranks the innovatory capacity of the world's leading technology nodes.

2. Evaluate those options as far as possible in quantitative and qualitative terms for:
   a. Their impact, good or bad, on current commodities, goods or services provided
   b. Alternative remedial strategies, if any, to cement in place those current activities by tweaking volume and quality of operations, or methods of delivery
   c. New commodities, goods or services, whether emergent from current operations or completely new
   d. Prospects for, and extent of, first mover advantage arising from (b) and (c).
3. Select those options with some optimal combination of:
   a. Lowest risk
   b. Highest ratio of upside to downside
   c. Greatest long-term pay-off
   d. Exponentially upward expanding possibilities
   e. Highest benefit to cost ratio.

   Their congruence with current culture, preferences, and actions is of minor importance. Moreover, a rapidly changing and complex world may offer few and somewhat disconnected clues for the necessary calculations. This is why Taleb (2012) talks about having "skin in the game", which elsewhere both he and I call experience. Unsurprisingly, we share the same guru, the philosopher Montaigne (1580), who advocates experience as the best guide to life.
4. Be prepared to take calculated risks. Don't be afraid of mistakes! Silicon Valley's initial start-up failure rate is anecdotally c. 75–85%, depending on (I) measurement techniques and (II) their timing. However, for those trying a second time the failure rate is only 70%. The benefit of the successes is truly spectacular and buries the losses of all the failures. In a complex and rapidly changing economic and social environment, present practice may offer the decision-maker little of value. So do not dwell in the past!

So at the heart of optionality is the detection of a constant stream of ideas relating to goods and services and/or their production, wise choice among alternatives, finding the entrepreneurs and venture capital to implement those choices and, in Taleb's view, financial conservatism within businesses and society's institutions – retaining capital for both a 'rainy day' when one's business or organization encounters turbulent conditions or for great opportunities that swim into view. For these reasons he dislikes the debt culture of the 2000s which led directly to the GFC. These actions are going to be highly fluid and the actors in the game require continuously imaginative mind-sets, which neatly brings us to the ultra-innovation of the world's technological hubs, like Silicon Valley. According to startup genome, such places typically meld the following attributes. They are information rich, heavily networked, future oriented, highly imaginative, intensely entrepreneurial, mentally flexible, accessible to large pools of venture capital, institutionally rich, mutually supportive, and willing to discard the past or unsuccessful initiatives. In Stanislav Lem's (2013) view, "analysis must be abandoned in favour of creative activity – of imitological practice. Hard-won objectivity drowns in a glut of complexity. So humans must grow into the fabric of the world", a diagnosis that agrees with Taleb's "having skin in the game".

This agenda must be heavily local for a myriad of reasons. A whole of society task is difficult to achieve at the level of the nation state with all its competing interests and perspectives.

Local communities, on the other hand, can often be galvanized by strong leadership, especially where a collection of local institutions act together through constructive dialogue – though not necessarily with singularity of view. In contrast, national and provincial governments tend to have little idea about local options or community aspirations in highly diversified rural space. Nor can they respond rapidly to changing or fast moving scenarios because of the ponderous processes of democracy discussed previously. Finally public bureaucracy tends to prefer useless one size-fits-all policies over flexibility and the sheer spatial diversity of rural life demands bespoke solutions (Sorensen 2009c). The logical outcome of this analysis is also daunting. Local and regional development, especially in remoter communities cannot be is about preserving existing lifestyles, cultures and industries … or sometimes even environments. Nor is it about developing broad-based blue-prints for the controlled evolution of future rural space, either by central governments, local authorities, or communities themselves. These agendas appear dead in times of turmoil, instability and uncertainty, which is where Jack Welch's initial dictums come into play. The only game in town is to invent the future, but do it at least as fast as the future arrives so that we inhabit regional communities enjoying stable adaptation. If we accept the notion embodied in Moore's Law, and extolled by the likes of Brynjolfsson and McAfee (2014), Hammersley (2012), Lem (2013) or Stephenson et al. (2013) that the future is accelerating exponentially and in often strange ways, participants in local and regional development may need exponentially flexible mind-sets, ever greater preparedness to accept risk and willingness to contest the past, faster ability to debate alternative perspectives, and frantic experimentation with new styles of entrepreneurial behavior. All this is, of course, not without risk as Brockman (2014) and his colleagues point out in entertaining but also alarming fashion. Rapid change is likely to engender all manner of unpleasant, unintended and probably unavoidable outcomes. Both Brynjolfsson and McAfee and Stephenson et al. adopt a similar lines albeit it with vastly different styles.

A New Research Agenda?

Can we, in effect, impart the values and capabilities of Silicon Valley in small-scale regional societies characterized by:

- Low population density
- Disconnected communities often separated by 100km or more
- Conservative respect for tradition
- Mobile workforces
- The prevalence of SMEs, rather than large corporations
- Fragile industries buffeted by flood, fire, drought, and oscillating commodity prices?

We in Australia, unlike most other parts of the world, have some track record in thinking how it might be done effectively and efficiently. Here, at least, the two dominant primary industries – agriculture and mining – already share many of the innovative characteristics of the world's leading innovation hubs and, over many years agriculture has recorded Australia's highest total factor productivity growth – much higher even than ICT (Productivity Commission 2005). The reason is very simple. If farmers have amongst the lowest government support of any in the world and they have to export two-thirds of their produce into corrupted global markets, the only way they can compete effecti-

vely is to embrace quickly the latest research and development, embrace new varieties of crops and livestock, raise the quality of output, reduce costs through scale economies and mechanization, and bring output quicker to market (Sorensen 2011a). In short, most successful farmers employ expediently many of the technological arenas listed in Table 1. Moreover and Deloitte (2014) nominates agribusiness as a principal harbinger of Australia's future prosperity and locus of greatest comparative advantage alongside the minerals and energy (mining, gas and oil), tourism, international education and wealth management. In short, rural basic industries top the list of growth sectors – unlike most countries on this planet.

For rural Australia, however, the development problem tends to lie with the provision of producer and consumer services and the slow recognition and take-up of new opportunities being released from the shackles of geography by ICT in particular, but also new forms of energy. In effect, rural regions host a two-speed economy, though to be fair both mining and agriculture could also benefit from a greater impetus for change to deliver greater efficiency and effectiveness. These observations suggest, in turn, the kind of research agenda set out in Table 2. Most of the themes listed arise from previous analysis in this article, but one requires special elaboration. In attending regional development discussions pertaining to rural society, I have heard time and again the view that we must share common purpose to respond effectively to the forces for change. This attitude is completely at odds with the tenor of the age into which many rural communities are stumbling. In the modern rapidly evolving world, the greatest advances are being made

Table 2. Towards Future-Oriented Community Cultures: An Action Research Agenda

	How can researchers and strategists:
1.	Dramatically promote awareness of global scientific & technological advances?
2.	Enhance local / regional endogenous research and development?
3.	Efficiently and effectively translate (1) and (2) into a stream of ideas for innovative, lower cost and better quality products and services?
4.	Harness those ideas entrepreneurially for production of local goods and services for regional and even global markets?
5.	Create greater risk awareness and acceptance among local businesses and communities alike?
6.	Leverage local learning from failure (from experience)?
7.	Engineer a large and steady flow of local / regional venture capital?
8.	Educate rural community members in the necessary skills to enable all of the above, and especially the increasingly important qualities of imagination and creativity which Brynjolfsson and McAfee see as vital for unlocking new technologies?
9.	Evaluate and quantify the public and private infrastructure necessary to promote these research agendas?
10.	Prioritize competing projects to maximize pay-offs from alternative combinations of options, given inevitable limitations in the supply of infrastructure capital?
11.	Decide which should be the lead agencies in these tasks and whether we have enough quality leaders?
12.	Improve the pool of high class future-oriented leaderships?
13.	Promote energetic community discussion and contest around these themes – and indeed are such contests of ideas crucial to the creation of future-oriented communities?

Source: The Author

by the contest of ideas or the decisions of forceful and often isolated individuals uninterested in forming coalitions of interests. Deference to others is rarely part of innovative agendas. Both Florida (2004) and Jacobs (1961) famously extol such notions in urban contexts.

What does matter is that as many elements as possible of rural society – whether businesses, bureaucracy, civic leaders, social institutions or private individuals – reorient to the future and develop skills, attitudes and behaviors necessary to propel society ever faster forward. Consider also this point. The environmental and geographical heterogeneity of rural space is so great that the strategies created are likely to differ from one place to another! This suggests another element in the research agenda: action research to document and disseminate information about the reasons for success or failure of different strategies or approaches adopted by particular places. This takes us back to Montaigne. In rapidly changing societies, experience is a priceless asset. The bars, clubs, cafes and restaurants of Castro Street in Mountain View in the heart of Silicon Valley are the factories for disseminating experience. In the vastness of rural Australia we need other means to achieve the same outcome.

Although my arguments have been developed in an Australian context, they seem likely to hold sway over much of the developed and developing world. The scenarios sketched by Brynjolfsson and McAfee (2014), Brockman, and Pentland (2014) and Hammersley (2012) point to an acceleration in technological achievements in what Brynjolfsson and McAfee term the second machine age, especially via the blending, fusion and integration of technologies. Their adverse impact on rural and regional economies everywhere is likely to be extreme, suggesting an urgent need to revise our conventional approaches to local development. On reflection, Australia's small and medium enterprises might be better placed than most because that nation's economy is one of the world's most market oriented and therefore focused on self-survival.

References

Argent N. M., Tonts M., Jones R., Holmes J., 2013, *A creativity-led rural renaissance? Amenity led migration, the creative turn and the uneven development of rural Australia*, Applied Geography, 44, pp. 88–98.

Brockman J., 2014, *What Should We Be Worried About? Real scenarios that keep scientists up at night*, New York, Harper Collins.

Brynjolfsson E., McAfee A., 2014, *The Second Machine Age: work, progress and prosperity in a time of brilliant technologies*, New York, Norton.

Deloitte, 2014, *Positioning for prosperity? Catching the next wave*, Building the Lucky Country: Business imperatives for a prosperous Australia, Report #3, Sydney, Deloitte Touche Tohmatsu Limited. [see www.buildingtheluckycountry.com.au]

Florida R., 2004, *Cities and the Creative Class*, New York, Routledge.

Hammersley B., 2012, *64 Things You Need to Know Now for Then*, Sydney, Hodder.

Jacobs J., 1961, *The Death and Life of Great American Cities*, New York, Random House.

Lem S., 2013, *Summa Technologiae*, Minneapolis, University of Minnesota Press. [a translation of the original 1964 text]

Montaigne M. de, 1580, *Essais*, Bordeaux, Simon Millanges.

Pentland A., 2014, *Social Physics: How Good Ideas Spread – The Lessons from a New Science*, Penguin Press, New York.

Prechter R. Jr., 2003, *Socionomics: The Science of History and Social Prediction*, Gainesville, GA, New Classics Library.

Productivity Commission, 2005, *Trends in Australian Agriculture*, Research Paper, Canberra.

Regional Australia Institute, 2012, *Tapping the Growth Potential of Regions for National Success*, Canberra, RAI Policy Briefing. Sourced at: http://www.regionalaustralia.org.au/wp-content/uploads/2013/06/RAI-OECD-Regional-Policy-Briefing.pdf.

Savage M., Devine F., Cunningham N., Taylor M., Li Y., Hjellbrekke J., Le Roux B., Friedman S., Miles A., 2013, *A New Model of Social Class: findings from the BBC's Great British class survey experiment*, Sociology, 47 (2), pp. 219–250.

Sorensen A. D., 2000, *Regional Development: Some Issues for Policy Makers*, Research Paper, 26, 1999–2000, Department of the Parliamentary Library, Canberra.

Sorensen A. D., 2002, *Regional Economic Governance: States, Markets and DIY*, [in] Bell S. (ed), *Economic Governance and Institutional Dynamics*, Oxford, Oxford University Press, pp. 262–285.

Sorensen A. D., 2009a, *Creativity in Rural Development: an Australian response to Florida (or a view from the fringe)*, International Journal of Foresight and Innovation Policy, 5, (1/2/3), pp. 24–43.

Sorensen A. D., 2009b, *Local development under uncertainty; Australia's rural perspective*, Rural Studies, 20, pp. 7–26.

Sorensen A. D., 2009c, *Australian Rural Development: multiple problems, bespoke solutions, the abdication of central governments and the ghost of Friedrich Nietzsche*, [in:] Frutos L. M., Climent E., Ruiz E., Bicalho A. M., Laurens L. (eds), *New Ruralities and Sustainable Use of Territory*, Zaragoza, IGU Commission on the Sustainable Development of Rural Systems, pp. 257–268.

Sorensen A. D., 2010, *The Psychology of regional Development*, Australasian Journal of Regional Studies, 16 (1), pp. 85–98.

Sorensen A. D., 2011a, *Australian Agricultural R&D and Innovation Systems*, International Journal of Foresight and Innovation Policy, 7 (1, 2, 3), pp. 192–211.

Sorensen A. D., 2011b, *Quantum Dreaming: the relevance of quantum mechanics to regional science*, Australasian Journal of Regional Studies, 17 (1), pp. 81–99.

Sorensen A. D., Epps., 2005, *The Idea of Stable Adaptation and its Origins*, [in:] Mather A. (ed.), *Land Use and Rural Sustainability*, International Geographical Union Commissions on Land Use/Cover Change and the Sustainability of Rural Systems, University of Aberdeen, pp. 1–10.

Sorensen A. D., Marshall N., Dollery B., 2007, *Changing Governance of Australian Regional Development: Systems and Effectiveness*, Space and Polity, 11 (3), pp. 297–315.

Stephenson N., Brin D., Egan G., Powers R., Robson J., Watts P., Aldiss B. W., Ridbom C., McAuley P., Kress N., Steele A., McDonald I., Fulda N., Goonan K. A., 2013, *Twelve Tomorrows*, Cambridge, Mass., Technology Review, Inc.

Storey K., 2001, *Fly-in/Fly-out and Fly-over: Mining and regional development in Western Australia*, Australian Geographer 32 (2), pp. 133–148.

Taleb N., 2007, *The Black Swan: The Impact of the Highly Improbable*, New York, Random House.

Taleb N., 2012, *Antifragile: Things That Gain From Disorder*, London, Penguin.

World Bank, 2011, *Multipolarity: The New Global Economy*, The International Bank for Reconstruction and Development, Washington D. C.

STUDIA OBSZARÓW WIEJSKICH
2015, volume 38, pp. 19–38
http://dx.doi.org/10.7163/SOW.38.2

KOMISJA OBSZARÓW WIEJSKICH
POLSKIE TOWARZYSTWO GEOGRAFICZNE
www.ptg.pan.pl

INSTYTUT GEOGRAFII I PRZESTRZENNEGO ZAGOSPODAROWANIA
POLSKA AKADEMIA NAUK
www.igipz.pan.pl

THE COMMUNAL AND RENEWED KIBBUTZ: IDEOLOGY, MANAGEMENT AND INSTITUTIONAL CHANGE

Michael SOFER[1] • Ephraim S. GROSSMAN[2] • David GROSSMAN[1]

Bar-Ilan University
[1]Department of Geography and Environment • [2]The Interdisciplinary Department of Social Sciences
Ramat-Gan, Israel 52900
soferm1@biu.ac.il • grossme1@biu.ac.il • david.grossman@biu.ac.il

Abstract: This study considers the roles of management and ideology in modifying the sustainability of communal systems. We approached this issue by discussing the major forces that shaped the planned kibbutz and the recent processes that have brought about its current transformation. Using a questionnaire-based survey we tried to reveal the relative importance that the members attach to traditional kibbutz values and their perception of the tension between the original ideology and the management strategies that have been imposed on the communal society by both external and internal forces. The findings indicate that pragmatism tends to prevail over ideology and communality has difficulty in functioning effectively in a highly complex and changing world. It points to the weakening of the communal system and to growing disengagement from principles of equality. However, the process and project of reshaping the kibbutz is ongoing.

Key-words: Israel, kibbutz, communality, renewed kibbutz, organizational change, restructuring.

Introduction

The *kibbutz* (pl. *kibbutzim*) is one of the forms of planned rural settlement in Israel. Since its inception more than one hundred years ago (the first kibbutz, Degania, was established in 1909), its ideas and principles have been continually debated by its members and its institutional structures and values have been re-evaluated. As an economic and social organization, it was frequently required to adjust to the external environment in which it was operating, even though its principles tended to place the kibbutz on a certain "pedestal" of exclusivity until the mid-1980s. The study of the kibbutz experience can throw light on the role of proper planning and management for the sustainability of communal systems. The idealism versus pragmatism debate is not new, but recent processes have drastically altered the possible solutions.

The first part of this paper consists of a discussion of the major forces and processes of change in the rural space in Israel and in the kibbutz based on an examination of the relevant literature. The second part is based almost exclusively on the findings derived from closed questionnaires that were distributed among members, managers and community

leaders of two kibbutzim. The aim was to identify the relative role of the pragmatic versus the ideology variables, as viewed by the kibbutz members, as well as to consider the roles of management and ideology in modifying the sustainability of communal systems.

Common property

In this article the term *communal* applies to economically-based rural systems that were concerned, in their formative stage, with extracting industries (particularly agriculture), even if they turned in time to secondary and tertiary activities in order to earn a livelihood. We are concerned, thus, with common property resources and their management.

Stevenson (1991, p. 46) defined the term *common property* as "a form of resource management in which a well-delineated group of [...] users participate in extraction or use of a jointly held [resource] according to explicitly or implicitly understood rules". Significantly, the word *management* is here part of the basic definition. There is a large variety of other terms, ideas and cultural variations that govern each of the communal institutions, whether its rules are officially sanctioned or not. The implication is that rules have to be enforced, even though their application may be flexible (Blomley 2005; Runge 1992).

Many communal groups had difficulty in successfully managing themselves. This probably accounts for the short-lived existence of many of them. The number of communes that were founded in the United States between the beginning of the nineteenth century and 1939 was impressive: a total of 236. But most of them survived for a short period of time (Oved 1993). Communal systems which survived longer, even for several centuries, were mostly those that played vital roles like provision of food security by regulating land use or overcoming the unpredictable vagaries of climate and human-generated uncertainties (Netting 1993). This has been confirmed in the Middle East and in other parts of the world (Grossman and Kark 2004). The specific constraints differ widely, but the common denominator of long-living communal systems was their practical functioning, such as pooling resources, coordinating seasonal village activities, or unexpected security issues (Andelson 1991; Morin 1996; Sofer 2009).

The survival of communal systems may be hampered by the need to change rules because of gradual or sudden alterations of social, political, or economic causes, or because of a series of events that occur at close intervals and have a strong impact on the existing organizations and their management effectiveness. Other factors that influence prospects for communal sustainability are the nature of the rules, the sanctions used for imposing the rules, and the various economic categories to which the communal holdings are applied (Ostrum 1990, 1999). Also effective leadership, insistence on equity and, most importantly, an uncompromised avoidance of 'free riding' practices (Oakerson 1992). If the latter becomes a norm, the very essence of communality is undermined. The last point is a rephrasing of the core-message of the well-known "Tragedy of the Commons" article (Hardin 1968).

Recent changes in the rural space

Rural areas in developed economies have been experiencing significant and multi-dimensional changes in recent years due to both ongoing long-term economic, socio-demographic and environmental processes, and various external factors. Among the outcomes there is the need to restructure land and labor, which is reflected in the decreased ability to farm and manage land resources, and in the growing number of rural residents adopting non-agricultural occupations (Sofer and Applebaum 2006). A second outcome is a notable change of the socio-demographic composition of the subject population, where out-migration has led to a distorted age structure especially in peripheral areas (Beteille 1994; Robinson 2004). A third one is urban encroachment and penetration of the rural space by in-migrants and external activities. This results in a permanent loss of agricultural land to housing, industry and infrastructure projects, and contributes to the gradual decline of the open green space (Edelman et al. 1999). A fourth result is that rural social structure is undergoing basic modifications. Among the conspicuous ones is that the degree of cooperation is reduced, as reflected in social and economic terms (Hogeland 2004). These changes have brought to the forefront a perception that rural landscapes possess a range of commodity and non-commodity use values simultaneously, and thus should not be linked to the traditional view as being solely agricultural, but rather as multifunctional space (McCarthy 2005; Woods 2010).

These processes have been operating in Israel where agriculture was the mainstay of rural settlement for many decades. However, in recent years changes and adjustments have been made in order to retain a competitive edge on the local and international markets. The importance of agriculture to the state economy has declined. The contribution of agriculture to the GDP in 2012 was a mere 1.7 percent, compared with about 4.8 percent in 1980 (CBS 2013). At the same time, the sector's productivity has significantly increased, in terms of both output per unit of labour and output per unit of capital. However, there have been other trends in the other sector's indicators: worsening terms of trade, fluctuation in income derived from agricultural production, and decline in the number of self-employed farmers (Ministry of Agriculture 2011). The outcome has been an increase in the employment share of other sectors. The major increase in rural employment has been in the public services followed by commerce and tourism.

The changes have particularly affected the cooperative farming communities of which the kibbutz is a major pillar. The resulting restructuring process of both rural space and rural communities has led to the emergence of new strategies of survival, such as farm diversification and pluriactivity, developed to cope with changing conditions. The ensuing effects include industrialisation of the rural space, a heightened penetration of commercial and service-sector businesses into villages, and an increase in commuting to employment hubs in the urban centres (Sofer and Applebaum 2009).

A major trigger to these changes was the economic crisis in the mid-1980s which resulted from government efforts to curb run-away inflation by means of a steep interest hike (Pauker 2011). Unlike former policies (a policy termed 'neo-corporatism' by Schwartz 1995), the government refused to bail out indebted settlements, including the kibbutzim, the most seriously affected sector. The eventual rehabilitation process structured for enabling a stronger economic base for the kibbutzim included a policy which allowed the re-zoning of farmland for non-farm uses, curtailing the political and economic power of

the cooperative movements and organizations, and allowing the development of expansion residential projects in the cooperative settlements. These measures accelerated the modification of the rural space and the transformation of the rural communities (Lapidot et al. 2000, 2006; Schwartz 1999).

The ideological tenets of the kibbutz: early evolution and modifications

The principles

The kibbutz, a planned cooperative settlement, adopted mainly during the first two generations of its existence (until about 1970), several variations of socialist ideologies which became part of ideological movements, which differed from each other by their relative strictness on a communalism-liberalism continuum. A major principle of the kibbutz ideology was economic and social equality among its members. The kibbutz economy was originally based on the sharing of all economic activities, i.e., production, external commerce and consumption. All means of production belonged to the community and its members. Management of economic activities was in the hands of the kibbutz members and they were expected to provide all the labour. Income from all sources went into a common purse. The kibbutz assumed responsibility for all the needs of its members, and there was no link between type and amount of work and monetary remuneration.

Even though adjustments were not new to the kibbutz system from its very beginning, the depth of the mid-1980s changes were unprecedented. The economic crisis brought to the surface dormant pressures to alter the system, to liberalize its economic environment and to allocate some degree of personal choice to the members. Inevitably, this led to individualization and to eventual privatisation of many kibbutzim (Gal 2011).

Spheres and forms of change

There are 270 kibbutz type settlements in Israel with about 150,000 residents, which make up about 1.9 percent of the state's population (CBS 2013). The dormant pressure to change evolved primarily from the widening gap between the economic and social reality and the kibbutz' original values. There is an ongoing debate about the degree of deviation from the previous norms that the new systems have generated. Some argue that their cumulative effect amounted to a revolution (Ravid 1994; Rosolio 1999), while others insist that they have only begun to operate under market principles and structured hierarchical mechanisms (Ben-Rafael 1997; Rosner and Getz 1994). But there is no doubt that the changes are spreading and an increasing number of kibbutzim are adopting them, even though there is a wide range of variation (Ben-Rafael 2003; Lapidot et al. 2006; Mort and Brenner 2003; Palgi and Reinharz 2011; Rosolio 1999; Russell et al. 2006).

The kibbutz existing types should be placed on a spectrum, rather than considered as dichotomies, because each kibbutz decides on which and how many innovations to adopt (Russell et al. 2006). However, the kibbutz movement itself recognizes a four-tier system of the types (termed 'livelihood modes'): (1) collective, (2) collective minus, (3) compounded, (4) security net (renewed) (Palgi and Orchan 2005). Only about one third of the kibbutzim are now considered as fully collective, but the dynamic change process does not operate in favor of this type. Moreover, the government has adopted Ben-Rafael's (2003) committee's Report to recognize the existence of a renewed form of the kibbutz.

It is possible to categorize the main changes into a number of spheres. In the sphere of production there has been a separation between the production units, particularly non-agricultural ones, from the community, and in an increasing number of cases, the building of partnerships with external sources of capital; allocating responsibility to each economic unit to provide profits (termed 'profit centers') i.e. decentralization of authority; establishing a 'managerial class' in order to run enterprises according to the competitive markets rules; introducing boards of directors that include even non-members (Topel 2011); encouraging, to an increasing extent, the responsibility of members to choose jobs and to raise income and, significantly, ignoring the original principle of self-labour and regarding hired labour as a vital necessity (Gets 1998; Helman 1994; Gal 2011). Additional change is turning more widely to external markets by selling services to individuals and firms located outside the kibbutz. Another important trend is the formation of regional affiliations for common projects, which replace, to some extent, the weakened ideological-based roof-organizations. An expression of this tendency is the strengthening position of the Regional Council at the expense of the kibbutz secretariats and the internal institutions (Bijaui 2005; Degani 2006).

In the sphere of consumption there has been a major transfer of responsibility from the community – the collective purse – to the individual and the family unit. A personal budget was introduced along with a growing degree of spending freedom. Members are charged for previously free resources and services such as meals in the dining hall, the use of the collective's cars, electricity and other utilities (Getz 1998; Helman 1994; Pavin 2011).

The business sector: Re-organization and management changes

There have been many changes in the management and the economic organizational structure of the kibbutz, and in various economic institutions. The increasing complexity of management and decision making is placed in the hands of a fewer number of authorized persons who have the proper expertise. The elected executive officers (secretaries; now renamed community managers) were gradually granted wider authority, and replaced various committees formerly engaged in economic and social matters. The original obligatory rotation of managers was abolished. The formation of an elite class was, in fact, not totally new, because the need for electing appropriate leadership never allowed the rotation of such jobs among the entire membership (Topel 2011).

The decision of some kibbutzim to separate business operations from the community was a fundamental change. This was accompanied by appointing a dual decision-making system and by depriving the community of sharing the profits or the dividends that had formerly been allocated to them (Russell et al. 2006; Topel and Ben-Rafael 2006). Members are increasingly allowed to establish their own enterprises, such as workshops, consulting services, or retail activities, while the community received a share of the profits. In addition, the number of members working on the outside, mostly in urban localities, greatly increased. The changing business environment required a re-shuffling of the former economy and of opening it up to private investment. Numerous kibbutz industries have been merged with other kibbutzim or with private firms. Listing with the Israeli or foreign Stock Exchanges is now a standard procedure (Cohen 2006).

The changes have affected the whole employment structure. Most kibbutzim gave up the past dominant principle of self-employment and encouraging volunteers to work

in their different sectors, instead some of them even hired foreign agricultural labour in recent years (Storm 2011). About 30 percent of the labour force, according to our findings (information provided by managers during the field work) consists of hired non-kibbutz workers, employed in farming, services and other blue-collar jobs. Industrial production is partly out-sourced and many kibbutzim have established offshore branches taking advantage of access to low cost labour markets. Many kibbutzim have branches of their industrial companies in foreign countries in order to facilitate contacts with their customers. They have become, in short, more capitalistic and increasingly globalised (KIA internet site).

This 'profit center' practice contributes to the stability of the kibbutz as a whole and facilitates supervision of members and non-members. The former were previously assumed either self-disciplined or sensitive to peer criticism. The new managers have a better chance than the former branch-heads to spot 'free-riders' or negligent behaviour and can use adequate sanctions, if necessary.

The differences between the old and the new systems has given rise to heightened tensions that have led to growing social deprivation and increased economic inequality. The profit-motivated management has been known to discharge former member – "employees". Unemployment was previously unknown, but is now an emergent issue.

The changing perception of consumption

The outcome of the transformation process has been most pronounced in the provision of services to members. The kibbutz was the only Israeli cooperative settlement that had insisted on including consumption in its rules. This is gradually disappearing, but the erosion process had been brewing for a long time. Budget allocations have gradually attained the form of wages. The idea that people could be taught to refrain from capitalist accumulation failed to materialize. Examples of this sobering disillusionment have been abundant since the early 1990s (Ben-Rafael 1997; Discussions Team 1991, 1992; Pavin 2011). The erosion of past bans on private ownership accelerated during the 1990s and the privatized drive progressively included an increasing number of consumption items, including even family cars. The right to own the home apartment has recently become a major issue whose implementation has become widely popular, but its realization has been slow or delayed because of several legal issues.

The gradual erosion of the communal consumption principle trend also added to the community's control over consumption. But the privatization process has not necessarily been in the individual's favour. Privatizing utilities such as water supply, electricity or line telephones was clearly against the interests of most members, who were accustomed to consume them freely. The significance of this transition is covered in the next chapter and will focus, among other topics, on some of these cases from the members' perspective.

Response to changes: The members' point of view

The survey: Purpose, methods and data

The purpose of the survey presented in this section is to assess the members' views about the values and management practices more than two decades after the mid-1980s crisis. The central research question is to what extent is there still an inter-relationship between these two; i.e., are the traditional values still adhered to by the kibbutz member, and how these stands are expressed in practice by their evaluation of the manner by which their kibbutz's economy is currently run?

The questionnaire was originally distributed among a random sample of 15–30 percent of the members of four kibbutzim stratified by age groups. Because of the relatively low response from two kibbutzim, we decided to include in the present paper only the two that had the largest response levels (31 and 24 households' questionnaires respectively). One is located in the Tel-Aviv rural-urban fringe and the other in the northern Sharon plain. Both are near the main economic core of Israel. The total number of valid returned questionnaires from the two kibbutzim that we retained was 55, we feel that they still enable us receive some valuable tendencies related to the changes in the kibbutz system.

The questions were grouped into several themes (sets of variables) which were analyzed by Pearson correlations. The sets referred to the main groups of variables that we posed in our research:

- On the principle of full equality
- On traditional (classic) values of the kibbutz
- On traditional and innovative management practices
- On traditional and new consumption practices and privatizing service provision.

These sets contained 65 individual variables (a few of them were eliminated when we realized that their contribution to our research was minimal). The answers were tabulated and analyzed, mostly by using the Communality Index (see below) and by calculating the intra-set variance. In a few cases, the intra-set correlation coefficients were also calculated and ranked by the degree of their conformity to the basic kibbutz tenets and to the respondents' adherence to traditional management practices.

We started the questionnaires by asking the responders what their perception of the impact of the overall change process was (on him and on various other bodies). The members' choices on this question and on a few other sets were tabulated, but most other questions (excluding the answer "do not know"), in regard to the communality tenets or the management, were graded on a '0' to '100' scale, that we called **Communality Index (CI)**, by reversing the variables (questions) that were negatively phrased, i.e., we disregarded the original wording of the printed question and presented the responses in a uniform manner (Box 1).

Box 1. The method of grading positively and negatively phrased questions

Choice	CI	Positively Phrased	Negatively Phrased
Fully disagree	0	1	4
Partly disagree	33.3	2	3
Partly agree	66.7	3	2
Fully agree	100	4	1

For the positive phrase the CI value '0' represents the 'no communality' pole while '100' stands for 'full communality'. For a negative phrase a value of '0', that originally expressed 'full communality' was changed into '100' so that in all phrases '100' stands for 'full communality'. The following example provides an additional explanation (Box 2).

Box 2. Example of Communality Index (CI)

Communality Index (CI)

The index refers to 0–100 scale in pro-communality phrased questions. It is reversed when the question negates communality.

E.g. 1: *Are you for full equality?* This is a positively phrased question. The mean for it (variable X; for N responses) is 2.2 on a range extending from 1 (disagree) to 4 (fully agree). 2.2 is 1.2 above 1 ('**0**'). The **CI** is thus (1.2/3) x 100 = 40.

E.g. 2: *Are you for unequal pay?* This variable (Y) is negatively phrased. The scale is therefore reversed. 4 (agree) becomes '0' and '1' (disagree) is 100. 2.2 is now 1.8 below 4 (i.e., above '**0**'). The **CI** is thus (1.8/3) x 100 = 60.

Inter-kibbutz and inter-age analysis

The first part of the findings concerns the analysis of the differences between the two kibbutzim. Both have undergone changes, the first (1) is still classified as communal (*shitufi*) while the second (2) is defined as renewed, i.e., the most privatized form of the kibbutz.

In the analysis that we performed the CI of kibbutz 1 was significantly higher than for kibbutz 2 on the equality set [$t(52)=4.83$, $p<0.01$] and for the economy set [$t(53)=2.71$, $p<0.01$]. There were no significant differences between the two kibbutzim for the basic values and consumption sets [$t(52)=1.45$, $p>0.05$; $t(52)=0.45$, $p>0.05$, respectively]. An analysis by age groups shows that the CIs of the older subjects are significantly higher than for the younger subjects only for the basic values set [$t(51)=2.03$, $p<0.05$].

These findings are quite consistent with the observation that most of the younger generation do not follow their parents' ideology and tend to be more interested in material success. Only a small minority is still interested in the so called traditional kibbutz life-mode. These age differences have far-reaching implications for the kibbutz's future and practically on all the economic and social aspects of its life.

Correlation analysis among the main question-sets

The next statistical analysis is devoted to the correlation between the major sets of variables. As can be seen in Table 1, the correlation coefficient for all three paired sets are positive and, with the exception of two of the consumption sets (equality and business economy management), are significant. An additional analysis reveals that there are significant differences between the CI results obtained from the different sets as described in Table 2 [$F(3,156)=14.66$, $p<0.001$]. For a more conclusive explanation of these results we suggest an in depth analysis of the individual variables of each set.

Table 1. Basic sets – Pearson correlations

Correlated Sets			Correlation Coefficients
Equality	X	Basic values	0.497 **
Equality	X	Business economy	0.414 **
Equality	X	Consumption	Not significant
Basic values	X	Business economy	0.399 **
Basic values	X	Consumption	0.323 *
Consumption	X	Business economy	Not significant

Significance: * p 0.01-0.05 ** p<0.001

Table 2. Differences between the sets (N=53)

Set	CI	Standard Deviation
Basic values	60.35	14.28
Economy management	50.74	17.80
Equality	44.06	23.66
Consumption	41.40	18.57

Attitudes toward the post-crisis changes

In this section and those that follow, we present the findings of the individual variable analysis. Most kibbutzim had introduced some changes even before the crisis of the 1980s, but the changes were of a fairly marginal nature and did not violate the kibbutz basic principles that set it apart from the external milieu. The kibbutzim were thus still defined as 'fully collective'. The following discussion is concentrated on the post-1980s changes and our purpose was to obtain an impression about the members' attitudes towards the practice itself (Table 3).

Table 3. The Impact of the changes that were adopted by the Kibbutz since 1986 on the community and on individual members

The effect on person or community	Mean for variable (scale: 2–5)*
For most the Kibbutz members	4.18
For future development prospects	4.04
For you personally	4.18
For the non-farm sector	3.45
For the farm sector	2.57

*Key: 2 – negative impact, 3 – no impact, 4 – slight impact, 5 – favourable impact

An analysis of variance confirmed the existence of a significant difference between the items [F(4,116)=17.17, sig<0.01]. Further repeated analysis confirmed that the last item was significantly low relative to the rest of the items in the group. The most outstanding finding of this set is the similarity between the respondent's perceived self-impact and the impacts perceived for the kibbutz' future development or, quite naturally, the impact of the changes on other kibbutz members. Significantly, however, a similar degree of an

'egocentric' attitude does not apply to the existing economic sphere (farm and non-farm), for which the average scores tended to be lower, indicating less favourable attitudes to the introduced changes.

Equality and related ideological values

The analysis of variance test with these six repeated measures, confirmed that there are differences between the variables [$F(5,170)=6.10$, $p<0.001$]. According to subsequent simple effect tests we found that the first three items and the last three items clustered together into two distinct groups. This indicates that there are two subsets of values, but even the variables that obtained the highest CI scores (Table 4) had only moderate CI. The low scores of the second sub-set suggest that full equality and communal unity are no longer part of the consensus. The relatively high CI obtained for the differential pay option of the first sub-set means that there is somewhat higher support for equality than for inequality, but full equality is even less popular. The last item reveals that continuing communal control over real-estate is very popular; however, there is an almost unanimous desire for privatized dwelling.

Table 4. Equality and social or national values (N=35)

Variable	Mean CI	Standard Deviation (SD)
Contribution to national and social welfare	58.11	29.54
General membership budget	54.30	37.13
Differential pay	51.44	41.50
Full equality pay	40.01	41.86
Separating business sector and community	31.43	34.25
Privatization of residential apartments	27.61	53.69

We also conducted a Pearson correlation analysis among these variables. The highest positive coefficients were obtained for the contrasting variables of full equality pay and differential pay (0.607; $p<0.001$). Residential privatization was also positively correlated with the same two contrasting variables at the $p<0.001$ level, and the correlations of business economy and community separation with the two contrasting payment variables were significant at the 0.05 level. The other variables were not significantly correlated.

Table 4 reveals that neither full equality – 'equal budget' – nor 'differential pay' are widely approved. These variables are, in fact, the two opposite poles of the full communal–full privatized spectrum. The low CIs for the residential and the community/business separation indicate the high popularity of these issues. Residential privatization is very popular but, as noted above, it has yet to be approved. The community/business separation issue has a somewhat higher CI result, showing that it is less popular, yet the low support that it obtained is rather surprising in view of the far-reaching implications that the separation has for increasing the control of the kibbutz economy by non-kibbutz firms. This low CI can be considered an obvious indication of the extent of decline of collective values.

National and social missions were originally basic tenets of all kibbutz movements. Their declining position is clearly evident in the lukewarm support they receive. This is an expression of the declining emphasis on socialist ideological values during recent years.

One should not draw far-reaching conclusions from this relatively low CI, which may be interpreted as a 'backlash' response against the declining image of the kibbutz among many Israelis.

Management and economic strategies

The CIs for the kibbutz business management are presented in Table 5. The data show that the two extreme poles of the 'communality spectrum' have little support. The idea of transferring all management to any non-kibbutz body is clearly rejected. At the other pole, placing management solely in the hands of kibbutz members (or sharing it with other kibbutzim) was also unpopular. Not surprisingly, most of the respondents seem to have favoured a middle course.

Table 5. The members' position on various business management strategies (N=30) CI (Means) and Standard Deviations (SD)

Economic strategy	CI	SD
Transfer management to external body without communal management	97.78	12.17
Manage the agricultural sector by non-kibbutz experts	81.12	22.62
Transfer management to non-kibbutz firms, but common directorate	78.89	33.31
Merge the industrial plants with non-kibbutz firms or private investors	57.78	36.02
Manage the branches by rotating kibbutz members	56.68	36.26
Manage the economy solely by the kibbutz but by qualified members	48.90	35.82
Establish profit centers for each of the kibbutz branches	30.00	23.74
Manage solely by the kibbutz or by sharing with other kibbutzim	18.90	31.19

An analysis of variance tests with these eight repeated measures, confirmed that there were differences between the variables of business management [$F(7,203)=26.74$, $p<0.001$]. According to subsequent simple effect tests we found that the eight items can be clustered into four sub-sets: (1) the first item, (2) the second and third, (3) the fourth, fifth and sixth and (4) the last two.

The fourth sub-set suggests that even though complete communal management is rejected, the strategy of transferring responsibility to profit centers is fairly popular. This apparent "inconsistency" can be seen as a vote, though lukewarm, in favour of decentralized management, in the hope that it will facilitate the supervision and the performance of the collective's industry.

The second subset points to the same, though not identical, tendency, but it can also be interpreted as favouring the retention, even though with some reservation, communal control. The hesitation to place management solely in members' hands may (3d sub-set) point to some disappointment with past management methods, but it may also reflect mistrust of specific kibbutz members. The last five variables, taken together, also reflect the rising preference for profit-maximization and the tendency to abandon the satisfier model that had prevailed before the 1980s crisis.

Alternative uses of buildings and land

We included in our questionnaire a set of questions that partly referred to the issue of privatizing unused residential buildings or premises and unused land resources (Table 6). In this case we felt that the way which we phrased the questions was not conducive for using the CI ranking. We opted, therefore, for the more conventional tabulation method. Our assumption was that favoring re-use of abandoned structures by non-members indicated reduced communality values.

Table 6. Leasing unused and unproductive buildings or land – frequency and percentage (Total refers to valid responses only)

	Dining hall and other halls		**Lease abandoned business buildings**		**Leasing farmland for business or events**		**Leasing for business or events low-earning structures**		**Leasing other non-used buildings (e. g., toddlers, children)**	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Sharing only	3	5.5	3	5.5	12	21.8	15	27.3	10	18.2
Seasonal use only	4	7.3	4	7.3	4	7.3	3	5.5	5	9.1
Special events	13	23.6	5	9.1	6	10.9	8	14.5	2	3.6
No limit	22	40.0	39	70.9	22	40.0	23	41.8	27	49.1
Total	42	76.4	51	92.7	44	80.0	49	89.1	44	80.0

Most of the members appear to favour the leasing (or re-using) of all the vacant properties with no reservation. The highest 'no limit' approval was for the leasing of abandoned business structures and the lowest approval rate was for the lease of the dining hall and the farmland. The dining hall was also the one which recorded the highest objection rate to any form of leasing.

Privatization of consumption: Basic utilities

The method of payment, if privatization is adopted, may differ according to additional personal considerations. Members having large families are likely to be against pricing by the number of users, while the aged, whose personal needs are unique, may be against payment by units of consumption because they tend to use larger amount than others, even though this pricing method guarantees optimal equity of unit costs. We took these options into consideration in phrasing the questionnaire (Table 7).

Table 7. Privatization of basic utilities: Allocation and pricing criteria

Pricing method		Opposed	Amount used	Family size	Seniority	Total
Water	N	13.0	34.0	6.0	1.0	54
	%	24.1	63.0	11.1	1.9	100
Telephones	N	6.0	37.0	11.0	1.0	55
	%	11.0	67.3	20.0	1.8	100
Electricity	N	7.0	35.0	11.0	2.0	55
	%	12.7	63.6	20.0	3.6	100

Privatization of other consumption goods and services

A selected number of services that were formerly provided, or fully paid for, by the community, are shown in Table 8. The list contains the most common services that the kibbutz traditionally provided, but two of them, profit centers for certain services, such as grocery shops, belong to the recent innovative changes. The laundry service is still communally provided in many settlements, even though it is not vital as before. Many 'kibbutzniks' own private washing machines and no longer wear the 'blue-colour' garments that were rotated among them in the old days, when manual labour was the norm.

Table 8. Consumption set (N=43)

Variable	CI	SD
Kibbutz has to share cost of public services	59.69	32.17
Establish profit centers for public services	46.51	33.48
Pay for breakfast	41.86	39.90
Pay for laundry	34.11	36.72
Kibbutz-owned shop or mini-market	17.05	25.59

The establishment of services as profit centers applies to specialized enrichment classes or special sport facilities that the kibbutz provides to children of adjacent settlements. The respondents are divided about this issue, as they are also divided on the breakfast issue. The disparity of opinion may be explained, at least partly, by the presence of both users and providers of services among the respondents, but we have no evidence to support this hypothesis. The explanation for the disparity on the breakfast issue may be that it is not as vital as it used to be, as most members prefer to have it at home.

The high CI of the first variable and the very low CI stand out (Table 8). Both variables clearly differ from the rest. These differences were confirmed by the analysis of variance test [$F(4,168)=10.87$, $p<0.001$]. This reflects the real difference between the first question, which does not refer to any specific service, and the other three that deal with specific subjects. The last question is also unique, but like the second one, it deals with an innovation that was almost un-heard of during the founders' era.

The low CI for the provision of shop or mini-market is the only one that obtained an almost unanimous score. This indicates that members definitely want to widen their choice of consumption goods and are willing to pay for this comfort. This is partly the result of the increasing ageing population, who require special products. It also reflects the diversi-

ty of demand by members and non-member residents or wage labourers. The main factor is, however, that the local shop minimizes the range of basic goods. An added advantage is that the price of the locally sold items is lower than elsewhere because members are not charged much above the purchasing price. Shopping facilities are now widely acceptable, in fact, even by the staunchest supporters of collectivity.

Overall, these findings indicate that there is no full consensus about any of the items. This is, most probably, a true manifestation of the perplexity that prevails among the kibbutz members. The widespread private ownership of consumer goods such as refrigerators, radios, television sets, computers and a variety of other devices contributes to the tendency to regard the private purchases of these items as natural. The 'accumulation' of such items was originally resented, but gradually became acceptable.

Discussion and conclusions

The analytical method used here (under the limitation of the sample size) enabled us to offer some new insights on the transformation process that the kibbutz settlement type is presently undergoing. To answer our main question on the inter-relationship between values and management practices, we correlated the basic value sets with those of the economic management sets. The two sets, except those of consumption, were significantly correlated but the consequent analysis of the single variables suggested that these findings are not as simple as they seem to emerge from macro-scale set analysis. This may be because the macro-scale is not sufficiently discriminating to explain the entire range of the inter-relationship between ideology and pragmatism. The finer scale analysis reveals that the kibbutz members do stick to basic communality values, but that this generalization does not always apply when the values are more specifically presented.

This tendency applies to the issue of budget allocation, to favouring the separation of business and community, to the privatization of housing, to the re-use of vacated buildings and less clearly, to the issue of mutual guarantees. It is tempting to conclude that the high communality scores for caring for the needy and mutual help may not be more than expressions of support for past principles and do not necessarily reflect true altruism.

The evident relations among the main sets of variables seem to be reasonable as all reflect personal values. On the other hand, the low levels of correlation between ideas about consumption and the other values merit consideration. It seems that the subjects relate to the question of consumption as separate of other set of values. The same idea is probably conveyed by the finding of a difference in the CI of basic values and the opinions regarding consumption. Kibbutz members want to detach their personal needs from the communal principals, which are largely attached to community and economic issues. Such are the responses regarding the impact of the changes the kibbutzim have adopted. While the changes are thought to impact personal lives they are less perceived as impacting the productive sectors of the kibbutz. This distinction implies that our subjects have a pragmatic way of thinking, whereby the personal and the collective spheres are judged in different manners.

The diversity of opinions on ideological tenets is reflected in the attitude toward the consumption sector and the relation to privatization. The opposition to privatization of utilities can be interpreted as favouring the continuation of common possession in order

to avoid personal responsibility for the use of common resources. As already noted above, the self-interest of the individual kibbutz member, is expected to disfavour privatization of utilities, because it transfers the cost of use to his/her own purse. The public interest, on the other hand, calls for avoiding the responsibility over their use in order to reduce wastage and avoid the temptation of exposing the community to a conflict between the individual member's interest and that of the collective (see Hardin 1968).

Favouring the continuation of the pre-1980s practice of communal responsibility for the consumption of utilities is, thus, a sign of ego-centric motivation while a pro-privatization stand may be motivated by altruism. We adopted this, apparently paradoxical assumption, when we assessed the member's stand on the privatization of water, electricity or line telephones. It is difficult to judge the motivation of the minority who opposed the privatization of these utilities. It is surprising that privatization of water, the most vital utility, has not met with even higher resistance. The reason for this is apparently that the rate for rural water consumption, including domestic use, is still subsidized and therefore relatively cheap. Overall, however, the results indicate that self-interest was not a main consideration and that the members' position regarding the system of pricing favoured equity, i.e., to pay by units of consumption.

The findings about alternative usage of buildings and land suggest that member's position was determined by considering each item according to its own specific functional merit. The 'classical' kibbutz was traditionally against letting-out its land or its other properties to non-kibbutz persons (except for certain activities serving its members). The fact that, with a single exception, more than half of the interviewees were in favour of abandoning this objection indicates that pragmatism has prevailed over ideology. However, there was still a small minority who clings to the old principle, while others have some reservations about it.

It is not surprising that abandoned and vacant buildings obtained, generally, greater unconditional consent for re-use, even by external entrepreneurs, than other properties, and that the public halls got the highest degree of conditional or total refusal. The latter attitude reflects the sentimental, cultural and social importance attached by many members to the dining hall, which was the central meeting place for both business and social purposes. It functions, in many cases, as the major such place in the kibbutz even at present, but even this 'residual' usage is declining.

The implication of these findings is that most of the responding members were not opposed to opening up the kibbutz to non-member people or firms. The former exclusiveness has been radically altered. The 'fence' has been lowered, even though not entirely removed.

The members' responses to questions dealing with business management reveal that they are genuinely concerned with keeping the community's control over its property. Most of the respondents are aware of the need to alter the management practices of the traditional communal kibbutz. They also realize that adjusting it to the increasingly competitive and complex economy cannot be achieved by following earlier practices or by relying on the members' adherence to abstract ideology or to good-will and self-discipline. On the other hand, they seem to cherish the old values and believe that they brought some sort of economical safety.

This is especially evident in the unanimous opposition to fully granting kibbutz management to non-kibbutz bodies. The CIs for the kibbutz business management clearly

reflect a rejection of the idea of transferring all management to any non-kibbutz body. At the same time placing management solely in the hands of kibbutz members (or sharing it with other kibbutzim) was also unpopular. The respondents favour a middle course.

The prevailing pragmatic approach of the interviewees testifies to the declining force of ideology. It also shows that communality, unless there is a sufficient degree of personal freedom, is hard to practice effectively in a highly complex and diverse world. This does not mean that 'common property' has been totally rejected and that there is justification for a full separation between community and economy. Our argument is, rather, that under highly dynamic conditions, when innovations follow each other at an unprecedented pace, it is necessary to pursue the most advanced management practices that can effectively cope with the situation. Even so, some of the members, especially the aged, prefer to preserve the values of the old kibbutz, and apply them as much as possible to the changing conditions.

The decentralization tendency, exemplified by the overwhelming support of the branch 'profit-centers' idea, is an innovation that points to the adoption of a principle that assures communal survival under the changing economic conditions: the need to provide a more specific purpose to the communal system by allocating each of the economic sectors a clear responsibility. A definite purpose, along with clear rules and sanctions for their violation, are considered among the basic principles of adequate communal management (Ostrum 1990).

Our research has yielded findings that point to the weakening of the communal system. One that stands out is that a growing number of members no longer endorse the former planned tenet of full equality. However, unlike *equity* (fairness), which must be strictly applied by communal leaderships, *equality* is not considered as an essential requirement for the sustainability of collectives (Oakerson 1992).

A more serious indication that threatens the very existence of the planned communal system is that the principle of collective ownership of the means of production is being progressively challenged. We found that the CI of two kibbutzim, a 'communal' and a 'renewed' kibbutz, did not differ in respect to basic values and consumption, which stand on the two extremes of the sets depicted in Table 2. However, the members of the two kibbutzim did differ on the account of economy management. It seems that the shift of beliefs is centered on this point. At present, kibbutz members mostly insist on communal ownership of their resources, but there are a few *renewed kibbutzim* that have already abandoning this principle altogether (except for farmland which is state land). If this trend becomes an accepted norm, it will undermine the very essence of the kibbutz. Most of the interviewed communal managers do not welcome this extreme prospect. Yet there is no guarantee that the future generation will be of the same mind.

The essence and characteristics of the kibbutz as an ideal type of a community have changed in the last three decades. Values of equality among members, self-labour, collective production and consumption were all relaxed. The transfer of communal services to the household domain, payment for contribution to the community that was voluntary in the past and halting rotation in management jobs are just a number of examples for the erosion of the former basic principles on which the kibbutz ideology was based. These outcomes of this research are to some degree complementing early ideas put forward by Palgi (2002) and Getz (2009). In addition, the outcomes suggest that kibbutz movement is gradually heading towards being a profit-maximizing society. Moreover, the erosion in

the degree of communalism and cooperation, and the increasing clash between common interest and self-interest are expressions of declining solidarity.

The kibbutz, as other planned cooperative settlements in Israel and in other developed countries, is in search of a new identity (Sofer and Grossman 2007). The communal system, which supported the social and economic structure, could not survive the changing economic conditions and a changing political-economic environment without a major transformation. There are a number of paths along which each community, the kibbutz in our case, may progress. In due course these changes may be gradual for some kibbutzim, and relatively more abrupt for others. Nonetheless, they may express a process of community convergence, by which the distinction between the cooperative settlements in Israel will lessen. The difficulties embedded in the process include reduced or even total loss of communal support for the needy and growing inequality between and within settlements. But there are also opportunities in this restructuring process. It may create new economic communities, which can better cope than the former structure with on-going economic and social changes, and still assure some degree of communality.

References

Andelson R. V., 1991, *Commons without Tragedy: The Congruence of Garrett Hardin and Henry George*, [in:] Andelson R. V. (ed.), *Commons without Tragedy, Protecting the Environment from Overpopulation – a New Approach*, London, Shepheard-Walwyn, pp. 27–43.

Ben-Rafael E., 1997, *Crisis and Transformation: The Kibbutz at Century's End*, Albany, State University of New York Press.

Ben-Rafael E., 2003, *Report on the Kibbutz*, Public Committee on the Kibbutzim Subject, Jerusalem (Hebrew).

Beteille R., 1994, *La Crise Rurale*, Que sais-je? Paris, Presses Universitaires de France.

Bijaui S., 2005, *The Emergence of Regionalism in the Kibbutz Movement: The Case of the 'Valleys' Circle*, Horizons in Geography, 63, pp. 133–163 (Hebrew).

Blomley N., 2005, *Remember Property?* Progress in Human Geography, 29 (2), pp. 125–127.

Central Bureau of Statistics (CBS), 2013, *Statistical Abstract of Israel 2013*, Jerusalem.

Cohen A., 2006, *Why the Kibbutzim Will Stop Issuing Stocks in the Stock Exchange*, Haaretz, The Marker June 7, 56 (Hebrew).

Degani O., 2006, *The Regional Council as an Alternative Supporting System for the Changing Kibbutz*, Horizons in Geography, 66, pp. 134–153 (Hebrew).

Discussions Team, 1991, *The Kibbutz at the Turn of the Century: Crisis, Change, Continuity*, Ramat Efal, Yad Tabenkin, First 3 meetings (Hebrew).

Discussions Team, 1992, *The Kibbutz at the Turn of the Century: Crisis, Change, Continuity*, Ramat Efal, Yad Tabenkin, Meetings 4, 5, 6 (Hebrew).

Edelman M., Roe J., Patton D., 1999, L*and Use Conflict: When City and Country Clash*, Dayton, OH: Kettering Foundation.

Gal A., 2011, *From "We" to "Me": The Ideological Roots of the Privatization of the Kibbutz*, [in:] Palgi M., Reinharz S. (eds.), *One Hundred Years of Kibbutz Life: A Century of Crises and Reinvention*, New Brunswick, Transactions, pp. 33–46.

Getz S., 1998, *Winds of Change*, [in:] Leviatan U., Quarter J., Oliver H. (eds.), *Crisis in the Israeli Kibbutz: Meeting the Challenge of Changing Times*, Westport, Praeger, pp. 13–25.

Getz S., 2009, *Changes in the Kibbutz – 2008*, Haifa Institute of the Research of the Kibbutz and the Cooperative Idea, University of Haifa (Hebrew).

Grossman D., Kark R., 2004, *Common Pool Management: Implications for Israeli Settlements*, Horizons in Geography, 60–61, pp. 99–107 (Hebrew).

Hardin G., 1968, *The Tragedy of the Commons*, Science, 162, pp. 1243–1248.

Helman A., 1994, *Privatization and the Israeli Kibbutz Experience*, Journal of Rural Cooperation, 22 (1–2), pp. 19–32.

Hogeland J., 2004, *How Culture Drives Economic Behavior in Cooperatives*, Journal of Rural Cooperation, 32 (1), pp. 19–36.

Kibbutz Industries Association (KIA) internet site: http://www.kia.co.il/infoeng/about.htm

Lapidot A., Applebaum L., Yehudai M., 2000, *From Protection to Competition: The Kibbutz in a Changing Environment*, Ramat Efal, Yad Tabenkin (Hebrew).

Lapidot A., Applebaum L., Yehudai M., 2006, *The Kibbutz in a Changing Environment – Between Survival and Preservation*, Horizons in Geography, 66, pp. 7–27 (Hebrew).

McCarthy J., 2005, *Rural Geography: Multifunctional Rural Geographies – Reactionary or Radical?* Progress in Human Geography, 29 (6), pp. 773–782.

Ministry of Agriculture, Rural Planning and Development Authority, 2011, *Economic Report on the State of Agriculture and the Rural Sector 2010* (Hebrew).

Morin S. R., 1996, *Common Property and Exchange in a Natural Resource Management System: A Case Study from Aceh Province*, *Indonesia*, Unpublished Ph.D Dissertation, University of Kentucky.

Mort J. A., Brenner G., 2003, *Our Hearts Invented a Place: Can Kibbutz Survive in Today's Israel?* Ithaca, Cornell University Press.

Netting R. M., 1993, *Smallholders, Householders; Farm Families and the Ecology of Intensive, Sustainable Agriculture*, Stanford, Stanford University Press.

Oakerson R. J., 1992, *Analyzing the Commons: A Framework*, [in:] Bromley D. W. (ed.), *Making the Commons Work: Theory, Practice, and Policy*, San Francisco, Institute for Contemporary Studies, pp. 41–59.

Ostrum E., 1990, *Governing the Commons: The Evolution of Institutions for Collective Actions*, Cambridge, Cambridge University Press.

Ostrum E., 1999, C*oping with Strategies of the Commons*, Annual Review of Political Science, 2, pp. 493–535.

Oved Y., 1993, *American Communes: The Historical Experience in Agricultural Cooperatives in Transition*, [in:] Csaki C., Kislev Y. (eds.), *Boulder*, Westview Press, pp. 383–392.

Palgi M., Orchan E., 2005, *Public Opinion Survey in the Kibbutzim in 2005*, Haifa, Haifa University, Kibbutz Research Institute (Hebrew).

Pauker A., 2011, T*he Early Roots of a Later Crisis – The Kibbutz Crisis of the 1980s and Its Roots at the Time of the Establishment of the State of Israel*, [in:] Palgi M., Reinharz S. (eds.), *One Hundred Years of Kibbutz Life: A Century of Crises and Reinvention*, Transactions, New Brunswick, pp. 19–32.

Pavin A., 2011, *Crisis, Social Capital and Community Resilience*, [in:] Palgi M., Reinharz S. (eds) *One Hundred Years of Kibbutz Life: A Century of Crises and Reinvention*, Transactions, New Brunswick, pp. 59–71.

Palgi M., 2002, *Organizational Change and Ideology: The Case of the Kibbutz*, International Review of Sociology, 12 (3), pp. 289–402.

Palgi M., Reinharz S., 2001, *The Kibbutz at One Hundred: A Century of Crises and Reinvention*, [in:] Palgi M., Reinharz S. (eds.), *One Hundred Years of Kibbutz Life: A Century of Crises and Reinvention,* New Brunswick, Transactions, pp. 1–12.

Ravid S., 1994, *Is the Kibbutz Undergoing a Value Change?* Journal of Rural Cooperation, 22 (1–2), pp. 33–40.

Robinson G. M., 2004, *Geographies of Agriculture: Globalisation, Restructuring and Sustainability*, Harlow, Pearson.

Rosner M., Getz S., 1994, *Towards a Theory of Changes in the Kibbutz*, Journal of Rural Cooperation, 22 (1–2), pp. 41–61.

Rosolio D., 1999, C*rises, Adjustments and Changes in the Kibbutz Movement*, Tel-Aviv, Am Oved (Hebrew).

Runge F., 1992, *Common Property and Collective Action in Economic Development*, [in:] Bromley D. W. (ed.), *Making the Commons Work: Theory, Practice, and Policy*, San Francisco, Institute for Contemporary Studies, pp. 17–39.

Russell R., Hanneman R., Getz S., 2006, *Demographic and Environmental Influences on the Diffusion of Change among the Israeli Kibbutzim, 1990–2001*, Worker Participation: Current Research and Future Trends: Research in the Sociology of Work, 16, pp. 269–297.

Schwartz M., 1995, *Unlimited Guarantees: History, Political Economy and the Crisis of Cooperative Agriculture in Israel*, Beer Sheva, Ben Gurion University Press, (Hebrew).

Schwartz M., 1999, *The Rise and Decline of the Israeli Moshav Cooperative: A Historical Overview*, Journal of Rural Cooperation, 27 (2), pp. 129–166.

Sofer M., 2009. *Twenty Years of Change in the Fijian Periphery: The Case of the Kadavu Island, Fiji*, Singapore Journal of Tropical Geography, 30, pp. 343–357.

Sofer M., Applebaum L., 2006, *The Rural Space in Israel in Search of Renewed Identity: The Case of the Moshav*, Journal of Rural Studies, 22, pp. 323–336.

Sofer M., Applebaum L., 2009, *The Emergence of Farmers-Entrepreneurs as Local Development Agents in the Rural Space of Israel*, Rural Studies, 20, pp. 107–125.

Sofer M., Grossman D., 2007, *The Kibbutz in Search of a New Identity*, Analele Universitatii Spiru Haret, Seria Geografie, 10, pp. 103–114.

Stevenson G. G., 1991, *Common Property Economics: A General Theory and Land Use Applications*, Cambridge, Cambridge University Press.

Storm M., 2011. *The Thai revolution: The Changes in Agriculture in the Kibbutzim and Moshavim of the Arava in the 1990s*, [in:] Palgi M., Reinharz S. (eds.), *One Hundred Years of Kibbutz Life: A Century of Crises and Reinvention*, New Brunswick, Transactions, pp. 289–301.

Topel M., 2011, *The Changing Composition of Kibbutz Elites*, [in:] Palgi M., Reinharz S. (eds), *One Hundred Years of Kibbutz Life: A Century of Crises and Reinvention*, New Brunswick, Transactions, pp. 47–58.

Topel M., Ben-Rafael, E., 2006, *Technocratic Leadership in the Kibbutz*, Horizons in Geography, 66, pp. 28–43 (Hebrew).

Woods M., 2010, *Rural*, London, Routledge.

STUDIA OBSZARÓW WIEJSKICH
2015, volume 38, pp. 39–54
http://dx.doi.org/10.7163/SOW.38.3

KOMISJA OBSZARÓW WIEJSKICH
POLSKIE TOWARZYSTWO GEOGRAFICZNE
www.ptg.pan.pl

INSTYTUT GEOGRAFII I PRZESTRZENNEGO ZAGOSPODAROWANIA
POLSKA AKADEMIA NAUK
www.igipz.pan.pl

EMPLOYMENT IN RURAL AREAS OF UKRAINE: TENDENCIES AND OPPORTUNITIES

Serhiy MOROZ

Sumy National Agrarian University
Department of Logistics and Production Management
160, H. Kondratyev St., Sumy, 40021, Ukraine
smorozmail@gmail.com

Abstract: The paper reviews the main tendencies and problems of rural employment in Ukraine. It has been concluded that the issue of rural employment could not be solved without a well-defined rural development policy and separately from other problems related to the rural regions. That is why it is necessary to implement in Ukraine the integrated rural policy which assumes a multisectoral approach to overcome the existing problems, to stimulate the economic diversity, and to expand non-agricultural activities in the rural areas. In order to develop the rural labour market it will be essential to achieve balance between the urban and rural areas, to create an attractive business environment, to build a stable rural financial system, and to develop physical and social infrastructures. In this paper the descriptive analysis is used to analyse tendencies and to identify opportunities for the increase in rural employment across the country.

Key-words: Rural employment, rural development policy, Ukraine.

Introduction

The market transformations had a strong impact on the socio-economic situation in rural areas of Ukraine. Due to the lack of a transparent rural development strategy, adverse effects were observed with respect to the quality of life of rural inhabitants. At present, the main problems of rural regions include a high unemployment rate, an increased migration of rural residents, reduction in the number of social infrastructure objects, deterioration of their material and technical base, and the lack of resources for maintenance and restoration of the productive potential of the rural areas (Borshchevsky et al. 2011).

Particular attention should be paid to a substantial decline of employment opportunities for rural inhabitants. It is connected with the fact that the Ukraine had relatively poorly diversified rural economy based primarily on agriculture. That is why the rural labor market has been strongly affected by agricultural reforms introduced since the 1990s.

During the reformation process the collective and State farms were liquidated in the agrarian sector. Instead, market-oriented private enterprises were set up. In consequence the number of jobs in these enterprises decreased sharply compared with collective and State farms. For a number of former employees the only opportunity to earn income was

to work on household plots. However, this type of employment is characterized by the predominant use of manual labor, low income level, and lack of social guarantees. Nowadays, the situation regarding employment opportunities for rural inhabitants is quite the same. The significant share of the rural population still works in the household plot sector. Moreover, in about half of rural settlements there are no legal entities engaged in economic activities (State Committee of Ukraine for Statistics 2006a).

So, the situation in the rural regions is getting worse, including negative socio-economic tendencies, high level of unemployment, and the spreading rural poverty. In this context it is important to define measures to develop the rural labour market and create new employment opportunities for rural population.

The objective of this paper is to analyse rural employment tendencies and to determine possibilities for the improvement of the rural labour market in Ukraine, taking into consideration experience of the EU countries. The paper is based on the data of the State Statistics Service of Ukraine and the survey of the socio-economic state of rural settlements carried out by Gorshenin Institute.

Background

It should be noted that there is no common understanding of rural employment. In the EU FP7 project "RuralJobs" it was defined as 'any income-generating activity undertaken by an individual that takes place in a rural area'. This definition covers both the self-employed and employees and all sectors of the economy. It also covers 'teleworkers' who live and work in rural areas even if their job is nominally located in an urban centre (Rural Jobs project 2013).

As stated by Fieldsend (2011) there is no simple definition of rural employment but that a sustainable approach to exploiting natural capital together with the development of the other capitals of the territory via a place-based (i. e. territorial policy) approach can create jobs and encourage working age people either to stay in, or relocate to, rural areas.

To have a deeper understanding of the rural employment peculiarities, it is essential to pay attention to the concept of rural labour markets. These markets are viewed as functional systems in which the employment demand is driven by regional competitiveness, whilst the employment supply is partly a function of demography (including inter-regional migration), but also that of various socio-economic factors which determine participation rates, and of the qualitative aspects of the labour force often referred to as "human capital" (Copus et al. 2006).

Labour markets can be said to function well if they achieve two primary objectives concerning efficiency and fairness. On an efficient labour market all workers willing to work for the current wage rates are likely to quickly find suitable jobs that match their skills, education and experience. Fairness is most typically measured in terms of whether a worker is paid according to the value of his/her work. A well-functioning labour market is also characterized by adequate protection of workers against the risk of income loss by enabling workers to quickly find a new job or through the provision of suitable social protection (ILO 2008).

Rural employment can be divided into two types: agricultural and non-agricultural one. Research studies confirm that the reduction of the number of rural inhabitants en-

gaged in agriculture is observed (see, for instance, Copus et al. 2006; OECD 2006). At the same time the non-agricultural sector is becoming more important for employment of the rural population and development of the rural areas.

According to Jonasson (2009) the rural non-agricultural employment (RNAE) includes all activities other than agricultural work on the own or somebody else's farm. A considerable share of the rural non-agricultural economy consists of the activities closely related to agriculture, such as food processing, transportation or marketing of agricultural goods. It also includes activities such as mining, construction, domestic services, and tourist-related services, with little or no connection to agriculture. RNAE is increasingly emphasized as a potential pathway out of rural poverty for people who are unable to secure their income in agriculture.

That is why special attention is given to the employment diversification, which is a major livelihood strategy in rural areas. The employment diversification is a dynamic socio-economic process within the framework of which the rural households extend the range of income sources in their income portfolio. Such diversified incomes are usually based on a mix of the farm and non-farm incomes. The employment diversification leads to an increase in the number and mix of income sources. Thus, employment diversification rises with the number of income sources, the equity of their distribution, and their dissimilarity (Buchenrieder et al. 2007).

Five strategic orientations which target the major driving forces for rural employment, namely: natural, financial, human, physical and social capital, and the interactions between them, could be the focus for future rural employment strategies. They are as follows:

- Encourage the development of key growth sectors
- Reinforce the local rural economy
- Improve skills and labour market participation in rural areas
- Develop infrastructure and services
- Ensure proper implementation of the strategy through support actions (Fieldsend 2011).

Rural employment tendencies

It is worth noting that the population has very limited employment opportunities in the rural regions of Ukraine. This problem is one of the most important in the rural areas. According to the all-Ukrainian sociological survey conducted by Gorshenin Institute, 52.9% of rural inhabitants mentioned unemployment as the main issue in their villages (Gorshenin Institute 2013a).

The drastic changes in the Ukrainian rural employment occurred due to transition from a centrally planned to a market economy. They were accompanied by the influence of many factors. First of all, the employment was affected by unfavourable demographic characteristics of the rural regions. The significant share of the population still lives in the rural areas (in 2012–31.2%). However, in absolute terms, the rural population declined from 19.2 million people in 1979 to 14.2 million people in 2012, i.e. by 26.0%. According to the existing methodology there are two types of settlements in Ukraine: urban and rural. The urban type settlements are the population centres which are approved by legislation as towns and urban type settlements. The remaining population centres are rural (State Statistics Service of Ukraine 2013e).

The decline in the number of rural population was aggravated by the deterioration of the rural population structure (Fig. 1). While the share of people aged 15–59 grew from 57.6% to 60.7% between 1979 and 2012, the percentage of children (0–14 years old) fell from 22.1% to 16.2%. Besides, a proportion of rural residents aged 60 and over increased from 20.3% to 23.1%. As a result of the above-mentioned changes, the average age of the rural population grew from 38.0 years to 40.7 years (Institute for Demography and Social Studies of the National Academy of Sciences of Ukraine 2007; State Statistics Service of Ukraine 2013c).

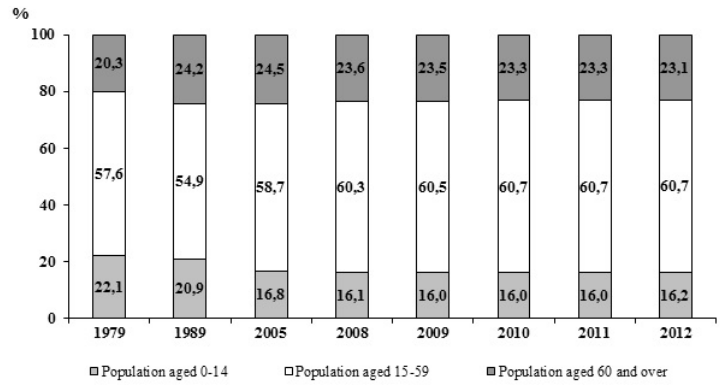


Fig. 1. Distribution of the rural population in Ukraine, 1979–2012, by broad age group (%)
Source: Own work based on the data of Institute for Demography and Social Studies of the National Academy of Sciences of Ukraine 2007; State Statistics Committee of Ukraine 2006b, 2009b, 2010c; State Statistics Service of Ukraine 2011, 2012b, 2013e.

However the rural regions of Ukraine are quite different with respect to their demographic indicators. For example, while analysing the change in the number of the rural population in 2006–2013, it should be noted that the smallest decrease of this indicator occurred in the Karpatsky and Prychornomorsky economic regions: by 1.8% and 3.0%, respectively (Table 1). Its most significant decline was found in the Shidny (by 9.4%) and Donetsky (by 8.5%) economic regions. The similar situation was observed with respect to the average age of rural residents. In 2013, the youngest population lived in Karpatsky and Prychornomorsky regions (38.4 and 39.0 years). At the same time the average age of rural inhabitants of Shidny and Tsentralny regions was substantially higher (43.3 and 43.1 years, respectively). Thus, it can be clearly seen that the most advantageous demographic characteristics could be found in the economic regions in the western and southern parts of Ukraine compared with the eastern and central parts of the country.

The rural regions continue to play a significant role in the employment of the Ukrainian population. It should be noted that in Ukraine the employed persons include those aged 15–70 who:

a) worked at least one hour during a referenced week:
- they were self-employed or employed by others, or worked in their own (family) enterprise and received money or remuneration in-kind,
- they worked for free in an enterprise, in household member owned business, or on an individual farm in order to sell products as a result of this activity,

b) were temporarily absent from work, i.e. they formally had a job, their own enter-

prise (own business); however, they did not work during the surveyed period for some reason (State Statistics Service of Ukraine 2013b).

In 2000–2012, the number of employed persons in rural areas decreased from 6,429.3 thousand to 6370.3 thousand. At the same time, the employment rate in rural areas increased from 57.3% to 62.7%. For a more detailed analysis let's consider the distribution of the employed rural population by employment status. In 2012, this distribution was as follows: hired workers – 59.2%, employers – 0.6%, self-employed – 39.4%, and unpaid family members – 0.8% (State Statistics Service of Ukraine, 2013b).

Table 1. The permanent rural population of Ukraine in 2006–2013, by economic region*, thousand persons (at the beginning of the year)

Economic regions	2006	2011	2013	Changes in the number of the permanent rural population in 2006–2013, %	The average age of the rural population in 2013, years
Karpatsky	3156.6	3099.9	3098.7	-1.8	38.4
Polisky	2174.3	2060.4	2035.7	-6.4	40.7
Podilsky	2180.9	2041.8	2003.8	-8.1	42.5
Shidny	1638.1	1518.2	1483.5	-9.4	43.3
Tsentralny	1325.7	1236.0	1218.2	-8.1	43.1
Prydniprovsky	1436.4	1357.3	1334.5	-7.1	41.5
Prychornomorsky	2435.9	2369.5	2362.3	-3.0	39.0
Donetsky	779.1	729.2	713.2	-8.5	43.0
Ukraine	15127.0	14412.3	14249.9	-5.8	40.7

* According to the methodology of the Council of Productive Forces Study of Ukraine of the National Academy of Sciences of Ukraine (State Statistics Service of Ukraine, 2012a), Ukraine can be divided into 8 economic regions which include the following oblasts: Shidny: Poltava, Kharkiv, and Sumy oblasts; Donetsky: Donetsk and Luhansk oblasts; Prydniprovsky: Zaporizhya, Kirovohrad, and Dnipropetrovsk oblasts; Prychornomorsky: Autonomous Republic of Crimea, Odesa, Mykolayiv, and Kherson oblasts; Podilsky: Ternopil, Vinnytsya, and Khmelnytskiy oblasts; Tsentralny: Cherkasy and Kyiv oblasts; Karpatsky: Chernivtsi, Zakarpattya, Ivano-Frankivsk, and Lviv oblasts; Polisky: Rivne, Volyn, Zhytomyr, and Chernihiv oblasts.
Source: Own work based on the data of the State Statistics Committee of Ukraine (2010b), State Statistics Service of Ukraine (2013c, 2013d).

Particular attention should be given to the category of the self-employed persons. The majority of these people are running individual farms which mainly rely on the manual labour. This type of employment does not require a high level of technical and technological skills. Actually, the self-employed people neither receive State support in respect of the production activities nor for the enhancement of their knowledge and practical skills in order to adapt to the changes in the employment system (Betliy et al. 2006).

In Ukraine, employed persons also include people who work in the informal sector of the economy. An enterprise in this sector has to be oriented towards market regarding economic activity, employ up to 5 workers and not registered. Table 2 shows data on the rural population employment in the informal sector. It shows that the proportion of rural

inhabitants involved in the sector is quite high (50.7% and 47.5% in 2007 and 2012, respectively). According to the national methodology, the informal sector includes persons employed in the unregistered enterprises which by their size (the number of workers) are classified as family businesses. This sector also involves people who work in the official sector based on a verbal agreement with the employer, namely without an official labour contract. In 2012, the proportion of hired workers in the total number of rural population employed in the informal sector was only 17.4%.

Table 2. The rural population employed in the informal sector of the Ukraine economy, 2005–2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2012 (+,-) to 2005**
Rural population employed in the informal sector of the economy:									
- the share of the total number of the employed rural population, %	47.5	50.5	50.7	47.9	46.4	47.7	48.3	47.5	0.0
- total, thousand persons	3125.4	3303.9	3341.9	3140.5	3019.7	3085.2	3115.3	3028.7	-96.7
including:									
1) hired workers:									
- thousand persons	350.6	394.6	429.6	525.0	524.0	518.0	522.5	528.2	+177.6
- the share of the total number of the rural population employed in the informal sector, %	11.2	11.9	12.9	16.7	17.4	16.8	16.8	17.4	+6.2
2) non-hired workers:									
- thousand persons	2774.8	2909.3	2912.3	2615.5	2495.7	2567.2	2592.8	2500.5	-274.3
- the share of the total number of the rural population employed in the informal sector, %	88.8	88.1	87.1	83.3	82.6	83.2	83.2	82.6	-6.2

Sources: Own work based on the data of the State Statistics Committee of Ukraine (2009a), State Statistics Service of Ukraine (2013b).

The spread of informal employment in rural regions was caused by the reduction of jobs in the agricultural enterprises. The unemployed rural population was forced to seek income and employment opportunities in the informal sector. This type of employment is particularly important for socially vulnerable groups of the rural population, namely: rural youth, pensioners, as well as people with a low level of education or without education, i.e. categories of the labour force for which it is difficult to compete in the agricultural labour market for various reasons. Employment in the informal sector mitigates to some extent the negative impact of the agrarian reforms. However, the members of rural population who work in the sector are not covered by the State social insurance and pro-

tection. Therefore, this type of employment cannot be considered as an effective way for addressing the needs of the rural population (Mahsma 2013).

Between 2005 and 2012 the rural unemployment rate which had been calculated in accordance with the methodology of the International Labour Organization grew from 5.7% to 7.4% (Table 3). Also, the rural economy was adversely affected by the age group distribution of the unemployed persons. The increase in unemployment rate occurred in all age groups (excluding the population aged 60–70). As a result, in 2012, the highest level of unemployment was observed in the 15–24 and 25–29 age groups – 14.6% and 9.4%, respectively. Thus, the problem of unemployment affected in particular the economically active rural population. It should also be mentioned that young people in rural areas were more involved in economic activities on the informal employment basis, primarily on the individual farms where almost two thirds of young persons aged 15–24 were employed (Institute for Demography and Social Studies of the National Academy of Sciences of Ukraine, 2007).

Table 3. Rural unemployment rate by age groups (according to the methodology of the International Labour Organization) (%), 2005–2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2012 (+,-) to 2005**
The total rural population aged 15–70	5.7	5.8	5.4	5.7	7.2	7.1	7.5	7.4	+1.7
of which by age groups (years):									
15–24	11.1	10.1	10.2	10.3	13.2	12.6	16.1	14.6	+3.5
25–29	6.3	6.7	6.2	6.6	8.3	8.4	9.1	9.4	+3.1
30–34	6.4	6.3	5.5	5.6	7.2	7.9	7.6	7.6	+1.2
35–39	6.5	6.1	5.8	6.0	7.3	8.7	7.0	6.6	+0.1
40–49	5.4	5.7	4.9	5.7	7.2	6.5	6.7	6.8	+1.4
50–59	4.0	4.4	4.3	4.2	5.3	4.8	5.0	5.5	+1.5
60–70	0.1	0.0	0.0	-	-	-	0.0	0.0	-0.1

Source: Own work based on the data of the State Statistics Committee of Ukraine (2009a, 2010a), State Statistics Service of Ukraine (2013b).

In 2013, the substantial proportion of rural population worked outside the place of residence: in other towns and settlements – 31.1%, and abroad – 16.3% (Fig. 2). Agriculture and the subsistence economy were the main economic sources of livelihood for 28.9% and 28.4% of rural inhabitants, respectively. This confirms that agriculture remains one of the major sectors, which provides employment and income-earning opportunities for the rural population. At the same time, a gradual development of other economic activities was observed in the rural areas. For instance, the respective percentages for respondents earning income from trade and private business were 24.6% and 14.8% (Gorshenin Institute 2013b).

Several peculiarities concerning agricultural employment can be mentioned (Figure 3). The total number of persons involved in agricultural activities fell from 4.3 million persons in 2000 to 3.5 million persons in 2012, i.e. by 18.6%. In this period, the share of

agriculture in total employment of the Ukrainian population fell from 21.5% to 17.2%. In the EU countries, in 2011, this indicator was 5.3%. However, there were considerable differences of this indicator among the EU countries. In this respect, Ukraine can be compared to Romania, Bulgaria and Poland which have the highest shares of agricultural employment in the EU (32.6%, 19.9% and 12.7%, respectively) (European Commission 2012).

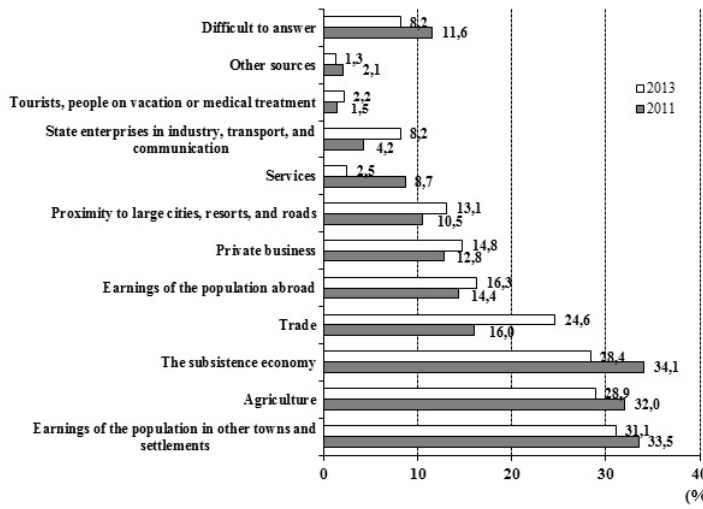


Fig. 2. Economic sources of livelihood in villages (%)
Note: respondents had a possibility to select up to three answer options.
Source: Gorshenin Institute (2013b).

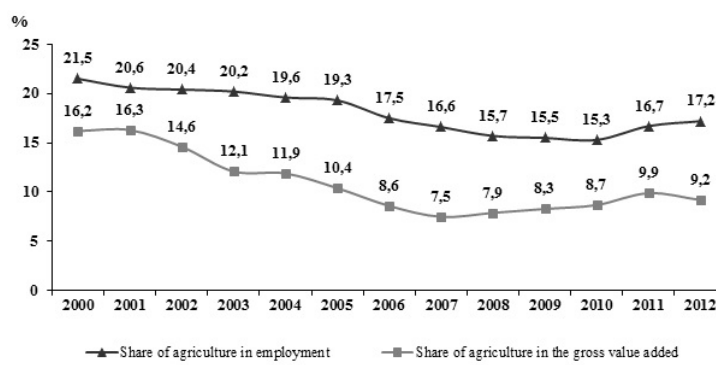


Fig. 3. The share of agriculture in employment and the gross value added in Ukraine (%), 2000–2012
Source: Own work based on the data of the State Statistics Committee of Ukraine (2003, 2008), State Statistics Service of Ukraine (2013e).

It should be noted that during 2000–2012, the proportion of hired agricultural workers in the total number of people involved in agriculture decreased from 63.5% to 21.2% (State Statistics Committee of Ukraine 2008; State Statistics Service of Ukraine 2013e). Also, there was the highest percentage of the population working in the informal sector of agriculture among all branches of economy. In 2012, this indicator was 64.8% (State Statistics Service of Ukraine 2013b).

It should be noted that the share of agriculture in the gross value added decreased from 16.2% in 2000 to 9.2% in 2012. The high level of agricultural employment and the simultaneous substantial decline of the share of agriculture in the gross value added indicate that the excess labour force is concentrated in the agricultural sector. This can be also illustrated by the fact that in 2012 the number of skilled workers looking for a job in agriculture, forestry, and fishery was on average 33 people per vacancy, while in all other types of economic activities there were only 11 people per vacancy (State Statistics Service of Ukraine 2013e).

Thus, the crisis situation concerning employment of rural inhabitants, especially among young people, is observed in Ukraine. This situation takes place not only because of the worsening indicators of economic activity, but also because of unfavourable demographic indicators in the rural areas, a decline in income and cultural levels of rural dwellers and people engaged in agriculture, and deterioration of social infrastructure (Yakuba 2007).

Perspectives of Rural Employment in Ukraine

In order to understand why these unfavourable tendencies in the rural employment take place in Ukraine, several factors have to be taken into consideration. From our point of view the most significant obstacle is the lack of a well-defined rural policy in the country. So far, the development of rural regions in Ukraine has been mainly seen from the angle of agricultural production. However, the research studies, carried out for example by the Organization for Economic Cooperation and Development (OECD), show that the rural policy which is mainly based on the agriculture could not use all favourable factors, ensure the effective development of rural territories, and solve the issue of rural employment (OECD 2006).

It should be taken into account that the agricultural reform strategy implemented in Ukraine has some peculiarities. From the beginning of the agrarian reform its main directions consisted in the development of private ownership, transformation of collective and State farms into market-oriented private legal structures, and creation of the competitive agricultural production. However, the slow pace of the agricultural reform and inconsistency in its implementation significantly complicated the restructuring process. During 1990–2012, the level of gross agricultural output on the farms of all types, estimated at the level of 2010 comparable prices, shrank from 282.8 billion hryvnias to 223.3 billion hryvnias, or by 21.0%. Whereas production in agricultural enterprises decreased by 43.2%, it grew by 31.8% on the individual plots. As a result, the proportion of gross agricultural output produced in agricultural enterprises declined from 70.4% in 1990 to 50.7% in 2012. In contrast to this, in 1990–2012, the share of household plots in gross agricultural output increased by 19.7% and amounted to 49.3%. Moreover, the significant number of agricultural enterprises was unprofitable (21.4% in 2012) (State Statistics Service of Ukraine 2013a).

In this context some researchers point out that the rural non-farm employment is a pillar of rural development policy and a critical factor for providing rural employment and income in the long-term perspective, (see, for instance: Nivyevskiy and von Cramon-Taubadel, 2006). According to Lerman et al. (2007) only 26% of corporate farms and

13% of individual farms in Ukraine reported any non-agricultural activities. The non-farm sector was more developed in the EU countries. In 2007, 34.8% of all EU farmers were engaged in gainful activities other than their farm work. The respective figures for Romania, Bulgaria, and Poland were 37.1%, 39.3%, and 37.7%. The proportion of employment in the non-agricultural sector in rural areas of the European Union was 86.7% in 2009 (European Commission 2012).

We share the point of view of some researchers (for instance, Lerman et al. 2007) that the scarcity of off-farm employment opportunities in rural areas is perhaps the greatest barrier preventing an increase in rural incomes. It is also relevant to mention that because of a high share of rural population working in the agricultural sector the transformation process of the rural labour market and development of the rural economy in Ukraine might take more time and be more complicated compared to other countries with economy in transition.

Taking into account the specific features of the rural employment issue, as well as the significant interdependence of all economic activities in rural settlements, it is necessary to work out a transparent rural development policy and to define its strategic goals for Ukraine. It is our understanding that the special attention should be paid to the following long-term aims of the rural policy in order to ensure the effective development of the rural labour market:

- Improvement of competitiveness and diversification of the rural economy,
- Introduction of measures to improve the quality of rural life and to increase rural incomes.

Diversification of the rural economy and, in particular, the rural employment should one of the key elements of the policy. This policy element could provide possibilities for rural residents to switch over from agriculture as a primary source of incomes to alternative non-farm activities.

The human capital is another factor which has strongly affects development of the rural labour market. It provides good opportunities to reduce poverty in rural areas and the income differentiation among rural residents, as well as to narrow the gap between urban and rural settlements in this respect (see, for instance: The International Bank for Reconstruction and Development / The World Bank 2007). It is worth noting that the actual level of the quality of human capital in rural settlements is extremely low in Ukraine. Also, the level of education and special training in the rural areas continues to lag behind urban areas in this respect. In 2012, only 11.8% of rural people aged 15–70 completed higher education, which was 18.6% less compared with urban inhabitants. 16.2% of rural dwellers had only secondary education. Moreover, 1.7% of the rural population had only primary education or was illiterate (State Statistics Service of Ukraine 2013b). This is why special educational and training programs should be introduced in the rural districts. In this respect, the attention could be paid, for instance, to the experience of the Essex Rural Partnership. The training schemes and practical courses for rural residents were initiated in Essex on the basis of colleges, schools, and libraries. The courses comprise basic skills such as literacy, numeric skills, key life skills and IT improvement skills. Besides, in order to facilitate access to these training programs of rural inhabitants, mobile facilities are used, such as the buses containing IT equipment with Internet access that travel across the rural communities (Council of European Municipalities and Regions 2003).

With the human capital considered at the level of an individual, the social capital is related to social groups of people. The level of social capital is determined on the basis of

the ability of inhabitants to establish relations with each other and to form social groups which could be able to carry out work jointly in order to achieve the common goals. That is why the most significant function of this type of capital is the social and integrated direction.

Go et al. (2013) distinguish three social capital dimensions and their role in connecting local and external stakeholders:

- from the *cognitive perspective*, the social capital present in the destination is the local stakeholders' possession of fine-grained understanding of local opportunities and weaknesses,
- from a *structural perspective*, the local stakeholders may interpret the strength in their social network ties as an organizational capability and main benefit,
- embedded governance knowledge from a *relational perspective* allows the formation of a destination decision support system.

It is worth noting that under the command economy the majority of socio-economic issues of Ukrainian rural settlements were solved by the State. Today, the State has very limited possibilities in this respect. However, the substantial proportion of the rural population still hopes that someone will come and solve all problems. Also, the lack of social and integrated links in Ukrainian rural communities is one of unfavourable factors that hamper their further development. We suggest that, based on the formation of social capital, it is necessary to build relationships and the trust between various social groups and, as a result, to overcome existing issues in rural Ukraine. Moreover, due to the activation of social capital people will become confident about their abilities to improve the situation and actively support rural reforms.

In this context, it is important to decentralize the management of rural territories, which envisages the use of the bottom-up approach and increase in the power of local rural authorities. To improve the quality of social capital in Ukraine it will be particularly helpful to pay attention to the EU LEADER Community Initiative, which is well known because of its innovative nature, and to use an approach similar to the LEADER program to promote the integrated development of rural territories.

At the same time the attention should be paid to the fact that rural regions are not homogeneous and they have quite diverse demographic and socio-economic characteristics. As a result, the LEADER program may have a different impact on the rural labour market as far as regions and economic sectors are concerned (see, for instance: Metis GmbH, AEIDL and CEU 2010). With regard to a possibility to respond to local employment problems, one area might be very successful and another not at all, depending on the type of activity, local entrepreneurs' participation, technical and financial assistance offered, and availability of training and skilled workers. Also, the LEADER results show that job creation in the rural areas is better solved as a policy objective when it is set as an indirect rather than as a direct aim (Saraceno 1999). Thus, to achieve positive changes in the rural labour market it is necessary to carry out a detailed economic analysis of rural regions before the implementation of the LEADER program.

One of the main elements of the LEADER method is the local action group characterized by decentralized financing, co-operation and partnerships of the public and private stakeholders. The LEADER method shows its organizational originality at the local level in the role and functioning of the Local Action Groups which play a key role as the "crossroads" of the complex system of vertical and horizontal relationships (OECD 2006). The

introduction of the LEADER program will be an important step towards the effective and manageable rural development policy, responding more quickly and flexibly to needs of the rural population. Besides, the experience of the European Union in the rural governance could be valuable for Ukraine because it provides possibilities for rural people not only to express their points of view on various issues, but also to participate directly in the decision-making process. Ukraine has already had some positive experience in the implementation of elements of the above-mentioned programs using the bottom-up approach (Community Based Approach to Local Development Project 2013). Thus, there is no doubt that it is important to continue these programs and to expand their activities in all regions of Ukraine.

While considering the factors which have a strong impact on the rural development, it is worth noting the importance of providing a favourable business environment in rural regions. It has a significant impact on the viability, competitiveness and growth of the rural economy, and, respectively, on the rural labour market. Currently, the business environment in Ukraine is poorly developed. According to the World Bank study of the business environments, Ukraine occupies only the 112th place among 189 countries (The International Bank for Reconstruction and Development /The World Bank 2013). This situation is hampered by the flawed legal, tax, and regulatory systems. It is important to simplify all these systems and to adjust them to the needs of rural enterprises. The rural business activities could be stimulated through the creation of business incubators and implementation of special training programs. Besides, it is necessary to provide the rural entrepreneurs with suitable access to market information so as to allow them to carry out their activities more effectively and to react timely to the changes in the market environment, to introduce technical innovations, etc. In this context, the provision of such information and consulting services has the particular importance to encourage development of the rural entrepreneurship. This can be done through further expansion of the national extension network in the rural districts, which should provide services to both farms and non-agricultural enterprises.

The enhancement of the rural labour market and the decrease of the share of the rural population living below the poverty threshold depend significantly on the development of the rural financial system. The efficient rural financial markets and financial services also provide good opportunities for the economic growth of rural territories, stimulation of rural entrepreneurship and reduction of the risk for various types of business activities. So far, the sustainable rural financial markets in Ukraine have not come into being yet. By contrast, especially in 1990s, among the major instruments of rural policies there were government-provided or government-subsidized targeted credits. In addition, the rural policy instruments were frequently changed, and consequently they had an impact mainly on the symptoms of rural finance issues instead of their fundamental reasons (Sedik 2003). That is why it is important to promote the development of rural credit cooperation (including credit unions, financial cooperatives and their networks, etc.) so as to facilitate the access of rural businesses to credit resources and to reduce their cost for borrowers.

Also, the lack of the balance between urban and rural settlements in terms of their social and economic conditions as well as employment opportunities is observed. Thus, the appropriate measures should be carried out to encourage the complementary development of urban and rural areas. It is necessary to balance employment opportuni-

ties which are important for the sustainable development of urban and rural territories. The particular attention should be devoted to the principle of subsidiarity which provides for the most active role of local and regional authorities in tackling the problem of rural unemployment. The local bodies should promote social integration processes and disseminate best practice. It would be relevant to mention the EU experience concerning the improvement of the interaction between urban and rural settlements in this respect (Council of European Municipalities and Regions 2003). The regional authorities need in turn to guarantee the effective distribution of public funds to local budgets.

It is also essential to develop the social infrastructure in order to promote rural employment and to improve the attractiveness of the rural areas in terms of living conditions. Unfortunately, as a result of a deep crisis of the rural economy the substantial share of villages did not have social infrastructure facilities, such as schools (53%), pre-school organizations (69%), health care institutions (33%), and club-houses (42%). Similar situation was observed with respect to other social infrastructure elements (Borodina et al. 2010). The negative tendencies related to this infrastructure significantly complicate the development of rural regions. In order to overcome the above-mentioned obstacles the attention should be paid to the adoption of appropriate measures in Ukraine using the integrated rural development approach. Besides, in order to create new rural jobs and to increase the attractiveness of rural territories in social and business terms the attention should be given to development of the economic infrastructure, transport, and information technologies, especially the Internet.

Conclusion

As a result of the above-mentioned considerations, it can be concluded that the issue of rural employment cannot be solved without a well-defined rural development policy, separately from other problems related to the rural regions. That is why it is necessary to implement in Ukraine the integrated rural policy, which provides for the multisectoral approach to overcome existing issues, to stimulate the economic diversity, and to expand non-farm activities in rural areas.

In this context, it will be particularly important to introduce in Ukraine a program similar to the EU LEADER initiative that gives good opportunities for rural communities to be involved directly in resolving problems of the rural settlements (including the rural employment), to coordinate actions of various participants of the rural development processes, to unlock the long-term potential of rural regions, and to provide favourable conditions for the enhancement of the quality of human and social capital. Also, it will be essential to achieve the balance between the urban and rural areas, to create an attractive business environment, to build a stable rural financial system, and to develop the physical, economic, and social infrastructures.

At the same time, the attention should be paid to the fact that rural regions are not homogeneous and they have quite diverse demographic and socio-economic characteristics. That is why the LEADER program may have a different impact on the rural labour market as far as the regions and economic sectors are concerned. Thus, to achieve positive changes in the rural labour market, it is necessary to carry out a detailed economic analysis of rural regions before the implementation of the LEADER program.

References

Betliy M., Borodin S., Borodina O., Feher I., Haydutsky A., Hazners Y., Hulbe I., Karlova N., Lekse O., Mohylny O., Mokshyna P., Moldavan L., Onyshchenko O., Petrechenko V., Popova O., Popp D., Potori P., Prokopa I., Serova E., Shubravska O., Shyk O., Skurska N., Zinchuk T., 2006, *The Agrarian Sector of Ukraine on the Way to Eurointegration*, Uzhgorod, IVA.

Borodina O., Prokopa I., Yurchyshyn V., Rykovska O., Yarovyy V., Popova O., Mishchenko N., Kutsmus N., Lukyanova M., Zinchuk T., Borodina O., Kyryzyuk S., Fursenko I., Pavlov V., Unguryan V., 2010, *Theory, Policy and Practice of Rural Development*, Institute of Economics and Forecasting of the National Academy of Sciences of Ukraine, Kyiv.

Borshchevsky V., Prytula H., Krupin V., Kulish I., 2011, *Problems and Perspectives of Development of Rural Areas of Ukraine (on the example of Karpatsky region): Research and Analytical Report*, National Academy of Sciences of Ukraine, Institute for Regional Studies, Lviv.

Buchenrieder G., Möllers J., Happe K., Davidova S., Fredriksson L., Bailey A., Gorton M., Kancs D., Swinnen J., Vranken L., Hubbard C., Ward N., Juvančič L., Milczarek D., Mishev P., 2007, *Conceptual Framework for Analysing Structural Change in Agriculture and Rural Livelihoods*, Discussion Paper, 113, Leibniz Institute of Agricultural Development in Central and Eastern Europe, Halle (Saale), Germany, pp. 1–83.

Community Based Approach to Local Development Project, 2013, *About CBA Project*, http://cba.org.ua/en/about/about-cba

Copus A., Hall C., Barnes A., Dalton G., Cook P., Weingarten P., Baum S., Stange H., Lindner C., Hill A., Eiden G., McQuaid R., Grieg M., Johansson M., 2006, *Study on Employment in Rural Areas*, SAC.

Council of European Municipalities and Regions, 2003, *Complementarities between Urban and Rural Areas in Promoting Employment and Social Inclusion*, Paris/Brussels.

European Commission, 2012, *Rural Development in the European Union. Statistical and Economic Information Report 2012*, Directorate-General for Agriculture and Rural Development.

Fieldsend A., 2011, *Rural Europe 2+2+: A conceptual Framework for a Rural Employment Policy*, Studies in Agricultural Economics, 113, pp. 145–151.

Go F., Trunfio M., Della Lucia M., 2013, *Social Capital and Governance for Sustainable Rural Development*, Studies in Agricultural Economics, 115, pp. 104–110.

Gorshenin Institute, 2013a, *The Socio-economic Situation of the Contemporary Ukrainian Village. Part 1*, http://institute.gorshenin.ua/researches/126_sotsialnoekonomichne_stanovishche.html

Gorshenin Institute, 2013b, *The Socio-economic Situation of the Contemporary Ukrainian Village. Part 2*, http://institute.gorshenin.ua/researches/128_sotsialnoekonomichne_stanovishche.html

ILO, 2008, *Report IV. Promotion of Rural Employment for Poverty Reduction. Fourth Item on the Agenda*, International Labour Conference, 97th Session, Geneva.

Institute for Demography and Social Studies of the National Academy of Sciences of Ukraine, 2007, *Population of Ukraine. Social and Demographic Problems of Rural Area*, Kyiv.

Jonasson E., 2009, *Earnings Differentials in the Rural Labor Market: Does Non-agricultural Employment Pay Better?* Working Papers 2008:7, Lund University, Department of Economics, http://project.nek.lu.se/publications/workpap/Papers/WP08_7.pdf

Lerman Z., Sedik D., Pugachov N., Goncharuk A., 2007, *Rethinking Agricultural Reform in Ukraine*, Studies on the Agricultural and Food Sector in Central and Eastern Europe, IAMO, Halle (Saale), vol. 38.

Mahsma M., 2013, *Informal Employment of the Rural Population of Ukraine*, BusinessInform, 7, pp. 175–180.

Metis GmbH, AEIDL and CEU, 2010, *Ex-post Evaluation of LEADER+. Final Deliverable*, Vienna.

Nivyevskiy O., von Cramon-Taubadel S., 2006, *Rural Non-Farm Employment in Ukraine*. Agriculture in the Face of Changing Markets, Institutions and Policies: Challenges and Strategies, Studies on the Agricultural and Food Sector in Central and Eastern Europe, 33, IAMO, Halle (Saale), pp. 484–496.

OECD, 2006, *The New Rural Paradigm: Policies and Governance*, Paris, OECD Publishing.

RuralJobs project, 2013, *Final Report*, http://cordis.europa.eu/documents/documentlibrary/137034081EN8.zip

Saraceno E., 1999, *Creating Jobs in Rural Areas. The LEADER Way to Job Creation*, http://ec.europa.eu/agriculture/rur/leader2/rural-en/biblio/emploi/art02.htm

Sedik D., 2003, *Rural Finance without Markets in Ukraine*, 1991–2000, ESA Working Paper 03-01, FAO, Rome, ftp://ftp.fao.org/docrep/fao/007/ae034e/ae034e00.pdf

State Statistics Committee of Ukraine, 2003, *Statistical Yearbook of Ukraine for 2002*, Kyiv.

State Committee of Ukraine for Statistics, 2006a, *Social and Economic Conditions of Rural Settlements in Ukraine*, Kyiv.

State Statistics Committee of Ukraine, 2006b, *Statistical Yearbook of Ukraine for 2005*, Kyiv.

State Statistics Committee of Ukraine, 2008, *Statistical Yearbook of Ukraine for 2007*, Kyiv.

State Statistics Committee of Ukraine, 2009a, *Economic Activity of the Population of Ukraine 2008*, Kyiv.

State Statistics Committee of Ukraine, 2009b, *Statistical Yearbook of Ukraine for 2008*, Kyiv.

State Statistics Committee of Ukraine, 2010a, *Economic Activity of the Population of Ukraine 2009*, Kyiv.

State Statistics Committee of Ukraine, 2010b, *Social Indicators of the Standard of Living of the Population 2009*, Kyiv.

State Statistics Committee of Ukraine, 2010c, *Statistical Yearbook of Ukraine for 2009*, Kyiv.

State Statistics Service of Ukraine, 2011, *Statistical Yearbook of Ukraine for 2010*, Kyiv.

State Statistics Service of Ukraine, 2012a, *Expenditures and Resources of Households of Ukraine in 2011*, Kyiv.

State Statistics Service of Ukraine, 2012b, *Statistical Yearbook of Ukraine for 2011*, Kyiv.

State Statistics Service of Ukraine, 2013a, *Agriculture of Ukraine 2012*, Kyiv.

State Statistics Service of Ukraine, 2013b, *Economic Activity of the Population of Ukraine 2012*, Kyiv.

State Statistics Service of Ukraine, 2013c, *Population of Ukraine in 2012*, Kyiv.

State Statistics Service of Ukraine, 2013d, *Social Indicators of the Standard of Living of the Population 2012*, Kyiv.

State Statistics Service of Ukraine, 2013e, *Statistical Yearbook of Ukraine for 2012*, Kyiv.

The International Bank for Reconstruction and Development / The World Bank, 2007, *World Development Report 2008: Agriculture for Development*, Washington, D.C.

The International Bank for Reconstruction and Development / The World Bank, 2013, *Doing Business 2014. Economy Profile: Ukraine*, Washington, D.C.

Yakuba K., 2007, *The Vital and Labor Potential of the Rural Population of Ukraine. Theory, Methodology, Practice*, Institute of Agrarian Economics, Kyiv.

STUDIA OBSZARÓW WIEJSKICH
2015, volume 38, pp. 55–76
http://dx.doi.org/10.7163/SOW.38.4

KOMISJA OBSZARÓW WIEJSKICH
POLSKIE TOWARZYSTWO GEOGRAFICZNE
www.ptg.pan.pl

INSTYTUT GEOGRAFII I PRZESTRZENNEGO ZAGOSPODAROWANIA
POLSKA AKADEMIA NAUK
www.igipz.pan.pl

PARTICIPATION AND MANAGEMENT IN PROTECTED NATURAL AREAS IN SPAIN: A PERSPECTIVE FROM SOCIAL CAPITAL AND TERRITORIAL DEVELOPMENT

Carmen VÁZQUEZ VARELA • José María MARTÍNEZ NAVARRO

University of Castilla-La Mancha
Faculty of Teaching Sciences and Humanities, Department of Geography and Town and Country Planning
Av. de los Alfares, 44, 16071 Cuenca, Spain
carmen.vazquez@uclm.es • josemaria.martinez@uclm.es

Abstract: This contribution forms part of the framework of the CasoNatura research project in order to analyse the social trust in two protected natural areas of Castilla-La Mancha region (Spain). It aims to assess contexts of legitimacy for the Government and management of the space between the agents and institutions. Furthermore, it tries to detect the level of territorial identity which has the population with regard to their municipality, natural space and supra-local scales. Conflict detection of environmental, social and economic nature and how to manage them will be analysed and assessed through methodologies including both bibliographical and documentary sources and qualitative techniques of socio-territorial analysis: surveys of the local population and Governing Board of the Park, interviews with "qualified informants" and interviews with organisations/institutions located in the territory in question.

Key-words: social capital, natural protected areas, participation, management, normative trust, Spain, Serranía de Cuenca Natural Park, Cabañeros National Park.

Introduction: a brief state of the art

In the context of the rural deprived regions, the potential of exploring the relation between social capital and processes of development seems to be relevant, not necessarily because in the rural territories this relation is clearer or is translated in more efficient results for the development, but because the social capital acquires an unsuspected value due to the deficiency or non-existence of other factors of territorial competitiveness (economic capital, communication infrastructures, human capital…). In a global economy, most of the resources are highly mobile (economic capital, labour force, information), while deprived rural areas[1] are at a disadvantage to compete successfully for these mobile

[1] Following the wise suggestion of one of the referees of this paper, it is worth to be critical about using "rural" as a direct synonym to "disadvantaged" or any other singular term. While this fact is often easily observed in peripheral and lagging rural regions, it is also very important to note that some types of rural areas, especially those closer to metropolitan areas or near the tourist developed coastal areas, are facing different developmental trends.

resources (Bryden 1998). Therefore, the competitive advantage of these rural areas lies in resources that this author called "immobile": social capital, cultural capital, environmental capital, and local knowledge. Other scholars make reference to a similar distinction when they talk about development 'hard factors' and 'soft factors' (Copus and Spikerman 2003). Social capital in the context of rural territories and societies also takes on special importance because it introduces new nuances in the consideration of development, which happens to turn more humanistic and not purely economic. Quality of life is not generated only by the possession of quantifiable assets, but by the availability of other benefits that derive from social ties, trust relations, or the existence of a code of conduct accepted by the community.

Lee et al. (2005) analysed social capital in rural areas of six European countries within the framework of the research Project RESTRIM (Restructuring in Marginal Rural Areas) funded by the European Union. In this project, one of the aspects developed within the research has been the role of social capital and identity in relation to rural development and the relations between the two former. Among their findings the researchers underline the fact that not always can be assumed that publicly funded projects are precursors of "local engagement"; however, the key factor seems to be the strength of the existing local democracy. Where the social capital brings benefits, it is likely to be associated with a plurality of cultural identities, a mixing and interweaving of spatial scales (through, for example, diverse marketing strategies), and strong links with the multiple historical themes that characterise European rural areas (Árnason et al. 2009).

The social capital cannot be thought of as a property of closed and bounded rural communities which merely perpetuates the myths of rurality as a preserve of old traditions. In fact, some authors argue that while participation is seen as an indication of social inclusion and social engagement, it is not the case that non-participation equates with social exclusion (Shortall 2008). And yet, on the other hand, it is very much linked with ideas of place and identity.

The above mentioned RESTRIM project has already proved that social capital is in the roots of the process of creating and implementing a local collective action, as well as trust in the collective action is a distinctive character of social capital. Furthermore, community analysis revealed that trust in the collective action depends on the role played by the State in terms of responses to individual and collective needs. Briefly speaking, the analysis appears to show that the main function of the State, at the local level, is to provide public services. In other words, the lack of public services generates a community that does not rely on collective action; and, consequently, the will to build social capital weakens. The research findings emphasized that when a community is poor in social capital, the State must provide a higher standard of public services in order to create an atmosphere of confidence in the collective action. Only within this environment will the community invest in the construction of social capital; and it is only on the basis of high levels of social capital that the local community can plan and implement effective policies of rural development. Within this framework, the investment in social capital building becomes a priority of public action.

Nahapiet and Ghoshal (1998), Tsai and Ghoshal (1998) define social capital as "the sum of the actual and potential resources embedded within, and available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through

that network." They divide it into the relational, cognitive and structural dimensions. The relational dimension is concerned with the behavioural embeddedness involving the nature of the relationships developed over time, including trust, norms and identity. *Normative trust* relates to the relational dimension of social capital because the norms create predictability and trustworthiness. Moreover, *normative trust* is manifest in the cognitive dimension of social capital that refers to shared representations, interpretations and systems of meaning, for example, to a shared vision among actors.

It is with specific reference to the park professionals as well as to the perception of the local population about the various environmental tools available to them that a research carried out in three national parks (Great Smoky Mountains National Park, USA, Virgin Islands National Park, U.S. Virgin Islands, and Podocarpus National Park, Ecuador) reveal that common assumptions about local residents as primarily motivated by rational economic stimuli are, at best, incomplete. Rather, the research reveals local distrust for park managers to be the most consistent predictor of active opposition toward neighbouring national parks, overshadowing traditional rational assessments of the benefits and disadvantages associated with the park presence among other factors. The research compares the relative explanatory power of different pathways leading toward park opposition and examines how perceptions of trustworthiness are developed (Stern 2008a).

On the other hand, as the existing studies suggest, one potential factor leading to a positive attitude towards the nature protected areas might be regional economic benefits or *territorial expectations* mainly through national/natural park-induced tourism (McCleave et al. 2006; Stern 2008a). These benefits are unlikely to be realized without successful tourism marketing and a clear protected area orientation of tourism businesses (Selby and Petäjistö 2009). Recent research suggests that the nature protected areas serve as considerable sources of regional income. At the same time, the economic benefits are regarded as a moderating tool when trying to reduce local resilience: "Local acceptance is maintained best through mechanisms that also support local economies" (Stoll-Kleemann and Job 2008).

Nature protection from the perspective of social capital and territorial development

Since the first establishment of the protected areas of outstanding natural beauty or species and habitat uniqueness, the dominant ideology underpinning their conservation has been that people are bad for natural resources (Gómez-Pompa and Kaus 1992). Policies and practice have, therefore, sought to exclude people and so discourage all forms of local participation. This style of conservation has neglected local people, their traditional knowledge and management systems, their institutions and social organisation, and the value of wild resources to them. The cost of conservation has been high. Social conflicts have grown in and around the protected areas, and conservation goals themselves have been threatened. Conservation itself needs rethinking. It has been dominated by the positivist and rationalist paradigm in which professionals assume they know best and so can analyse and influence natural resources in the ways they desire. Professionals tend to be reductionist in their approach, taking only the presence of a particular species or total species diversity as indicators of value. Such preservationist ideology is dominated by the desire to exclude local people. Yet, there is a growing empirical evidence to show that local people have long influenced natural systems in ways that improve biodiversity (Pimbert and Pretty 1995). Relationships of trust, reciprocity and exchange, common rules,

norms and sanctions, and connectedness in groups are what make up social capital which is a necessary resource for shaping individual action to achieve positive biodiversity outcomes. New ideas spread more rapidly where there is a high social capital. There remain many practical and policy difficulties, however; not least regarding the need to invest in social capital formation and the many unresolved questions of how the state views the communities empowered to make their own decisions (Pretty and Smith 2004).

At this point, it should be remembered that the renewed focus on natural conservation points towards a more active approach, preserving the nature under the slogan "preserve is to develop", pursuing the overcoming of the problems directly affecting both the local population and the land owners (communal ownership, municipal property, private owners, etc.) as well as potential conflicts through the articulation of natural protected areas as tools for revitalizing local economies in marginalized rural areas (Martínez and Romero 2003) and becoming, by contrast, basic tools for social and economic development of the rural economies of the areas of influence of natural protected areas.

The problem with the positivist paradigm is that its absolutist position appears to exclude other possibilities. Yet the important point about positivism is that it is just one of many ways of describing the world, and what is needed is pluralistic ways of thinking about the world and acting to change it. Recent years have seen the emergence of a remarkable number of advances in a wide range of disciplines and fields of investigation. The sources include the so-called `hard' sciences, such as physics, biology and mathematics, as well as the `soft' sciences of economics, philosophy and sociology.

Five principles set out the crucial differences between these emerging paradigms and positivist science (Pretty 1994). The first is that any belief that sustainability can be precisely defined is wrong. The second is that problems are always open to interpretation. All actors have uniquely different perspectives on what is a problem and what constitutes improvement. In fact, Smith (1990, 1996) and Harvey (1989) argue that space is produced through the social practices, science, planning, and technology, and space is lived in and understood through the symbols, language, and images. Subsequently the geographers have used these ideas to think about the production of natural spaces in preservation projects (Katz 1998). The third is that the resolution of one problem inevitably leads to the production of another 'problem-situation', as problems are endemic. The fourth is that the key feature now becomes the capacity of actors continually to learn about these changing conditions, so that they can act quickly to transform the existing activities. The fifth is that systems of learning and interaction are needed to seek the multiple perspectives of the various interested parties and encourage their greater involvement. Participation and collaboration are essential components of any system of inquiry, as any change cannot be effected without the full involvement of all stakeholders and the adequate representation of their views and perspectives.

This supports the view of those working in this area when they say that the proliferation of such protection (protected areas) as well as its priority location in rural mountain areas strongly characterised by deprivation, inexorably raises the issue of coordinating tools for town and country planning, environmental planning and rural development. To date, this socio-economic role, sometimes poorly understood, has resulted in the majority of cases in a management response in the form of public financing through economic and social development programmes for populations inside or around the natural protected areas, becoming a "collective compensation" or a "positive compensation" and

trying with these plans to reduce the constraints imposed by the newly protected area (Garayo 2001).

However, not only the financial and management problems are the cause of possible failures associated with the natural spaces as development tools, but that responsibility is considerably extended, and other scholars (Mulero 2002) note the management and administration complexity arising from the extensive catalogue of the categories of protected areas at various scales (International, European, national, regional, etc.) that in many cases fuel the conceptual confusion between them (Florido and Lozano 2005). Moreover, the legal support in favour of the relationship "natural protected space/socio-economic development" is limited. Therefore, participation of the rural communities during the process of declaration (public reporting period) and in emerging conflicts subsequently rooted in it is not only thought useful but indispensable with a view to creating the awareness of the benefits generated by the protection which prevents the natural space itself to be perceived as a reflection of a lack of social solidarity model. This active participation is reflected in the slogan "to preserve with local people" that translates directly into overcoming obsolete consultation models giving way to shared responsibilities between stakeholders so that mutual support is consolidated in the programming, design and implementation of actions, plans, tools, etc., all of them with the common denominator of integration of the inhabitants in the global territorial policies to cover natural conservation and the rational and sustainable use of the territory.

Study Area

Based on this theoretical framework, and with the aspiration to achieve the objectives that we will detail further, we have selected eight case studies throughout the Spanish territory, two of them in Castilla-La Mancha region, both presented here to try to verify the hypothesis advanced in this stage of work (Fig. 1). The current Cabañeros National Park was declared Natural Park in 1988, but protection of this natural area was even more reinforced when a few years later, in 1995, it managed to obtain the highest level of national protection: National Park. With a total surface of 40,855.98 ha since 2005, the territory of Cabañeros transformed as a result of human activity throughout history, has become a peculiar landscape of extensive alluvial plains previously used for growing rain fed cereals and as rich seasonal pastures, a meadow landscape popularly known as *Dehesa*. The Park lies sheltered by the Chorito and Rocigalgo mountain ranges, among other mountains, completely covered with Mediterranean forest and scrub and perfectly preserved. There are municipalities included within the Area of Socio-Economic Influence of the National Park – four of them located in the province of Ciudad Real and two in the Toledo – one with a total population of 5,652 inhabitants in 2013 (Table 1). Today, cattle-breeding remains the common activity in the Park surroundings, with a production of cheese of excellent quality. In addition, cereal and olive tree continue to be cultivated.

The Serranía de Cuenca Natural Park, declared under regional law, was passed by law 5/2007, with a surface of 73,726 has. The eleven municipalities concerned by the Serranía de Cuenca Natural Park embraced a population of 1,744 inhabitants the year 2013, unevenly spread throughout the territory, although the essential feature is the small size of their human settlements, with the exception of the provincial capital (56,107 inhabitants in 2013) (Table 2). Most of the working population is engaged in the primary sec-

tor: forestry, livestock and agriculture account for the highest percentage. The industry is a weaker sector in the region. 70% of the surface is covered by public woodlands, mostly belonging to the municipality.

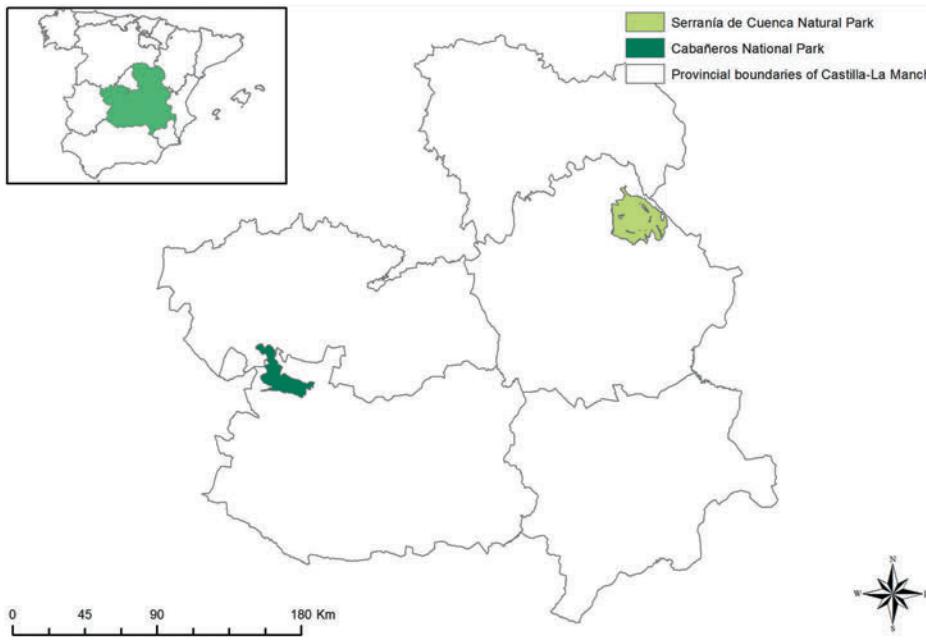


Fig. 1. Location of Cabañeros National Park and Serranía de Cuenca Natural Park in Castilla-La Mancha region – Spain

Table 1. Municipalities and area occupied by Cabañeros National Park in each municipality included within the Area of socio-economic influence

Municipalities	Province	Inhabitants 2013	Surface (ha)	Area occupied by the Park (ha)	Municipal protected area (%)	% of the area of the Park
Alcoba de los Montes	Ciudad Real	659	30,710	15,520	50.5	38.0
Horcajo de los Montes	Ciudad Real	987	20,844	6,174	29.6	15.1
Navas de Estena	Ciudad Real	291	14,654	9,817	67.0	24.0
Retuerta del Bullaque	Ciudad Real	1,063	65,391	3,743	5.7	9.2
Hontanar	Toledo	176	15,177	2,964	19.5	7.3
Navalucillos (Los)	Toledo	2,476	35,594	2,638	7.4	6.5
TOTAL		5,652	182,370	40,856	22.4	100.0

Source: Spanish Statistical Office, 2014.

Table 2. Municipalities and area occupied by Serranía de Cuenca Natural Park in each municipality included within the Area of socio-economic influence

Municipalities	Province	Inhabitants 2013	Surface (ha)	Area occupied by the Park (ha)	Municipal protected area (%)	% of the area of the Park
Arcos de la Sierra	Cuenca	102	4,100	1,1784.52	43.5	2.4
Beamud	Cuenca	53	2,400	2,380.62	100.0	3.2
Cuenca	Cuenca	56,107	91,100	34,278.94	37.6	45.3
Huélamo	Cuenca	116	7,900	7,902.16	100.0	10.4
Majadas (Las)	Cuenca	294	8,700	8,730.17	100.0	11.5
Portilla	Cuenca	72	3,300	1,995.00	60.5	2.6
Tragacete	Cuenca	310	6,100	6,117.12	100.0	8.1
Uña	Cuenca	98	2,300	2,332.57	100.0	3.1
Valdemeca	Cuenca	92	7,000	6,970.64	100.0	9.2
Villalba de la Sierra	Cuenca	529	4,100	1,847.36	45.1	2.4
Zafrilla	Cuenca	78	10,600	1,328.23	12.5	1.8
TOTAL		57,851	147,600	75,667.33	51.3	100.0

Source: Spanish Statistical Office, 2014.

Hypothesis and objectives

The initial hypothesis that supports the objectives of the project research framework is that the success of the socio-economic development of natural spaces depends on the existence of social capital, i.e. of the links and interactions between people and institutions at different scales.

This hypothesis is broken down into the following sub-hypotheses and objectives at this stage of the project:

- H1. The strength of the existing local democracy translates into greater agility and transparency of forms of participation and management of the protected natural space.
- *O1. To analyse the frequency and content of the meetings of the collegiate bodies of both parks, as well as the perception of the local population about the various environmental tools available to them.*
- H2. Situations of social conflict associated with the Declaration and the management of the protected natural space reflect the role played by the population (the state of involvement of local society in these spaces).
- *O2. To read the perception of the members of the collegiate bodies and of the local associations about the generation of conflicts and problems among the local population.*
- H3. The trust in collective action depends on the role played by the Administration in terms of responses to individual and collective needs.
- *O3. To evaluate programs and investments made in the field of socio-economic development (quantity, continuity and planning) linked directly to its Declaration as a protected natural area.*

Methodology and sources

The research project uses a combination of social research methods including quantitative and qualitative, direct and indirect sources. Thus, in this phase of the project, with strongly qualitative nature, we have addressed the collection, treatment and analysis of the following:

- Indirect sources: Search and analysis of internal documents of an administrative nature such as the minutes of the meetings of the Board of Trustees (Cabañeros National Park) and Governing Board (Serranía de Cuenca Natural Park) of each Park and the annual reports on their work.
- Direct sources: development of a standardized questionnaire that was distributed among the members of the collegiate bodies of the parks and all associations based in the municipalities of the area of socio-economic influence who agreed to collaborate under the research in spring of 2011. A sample of 55 completed standardized questionnaires (25 from the members of collegiate bodies of the parks and 30 from the members of associations) was finally obtained. They were supplemented with four semi-structured in-depth interviews with a sample of key informants (the director-curators of both parks and the managers of the Local action groups operating in both territories) to whom their responsibilities and/or position provide an overview enriched on many occasions with the diachronic analysis capability.

Overview of the Nature Protection System in spain

Since the inauguration of that first *Covadonga National Park* in 1918 until today, the protection of nature has grown greatly in Spain. In the intervening ninety five years, one and a half thousand protected spaces have been declared, slowly at first and then almost explosively in recent decades, to reach over 1,600 currently in operation. In total, these represent a little more than six million hectares of land and another quarter million hectares of marine areas. In other words, 12% of the surface area of Spain is today protected with regard to its natural values. This calculation includes 15 spaces classified under the category of National Park and hundreds of natural parks, nature reserves, monuments and other protection categories that are not always easy to classify due to a large variety of names and specific regulations that have been created as the various administrations at the State, Regional and, in some cases Provincial or Insular levels have developed their powers in this area. The regional legislation contains up to 48 different forms of protection: natural landscape, picturesque landscape, wildlife refuges, peri-urban parks, etc.

The current 155 declared natural parks aim to make conservation and sustainable rural socio-economic development compatible. 290 natural monuments cover places of exceptional geo-morphological and geological value, 265 nature reserves are aimed at conserving singular species and habitats and 53 protected landscapes are intended to preserve traditional cultures essential for the character of a territory.

In Spain, the Central Government is responsible for the basic legislation concerning the protected natural areas. However, the declaration and management of these lies with the Autonomous Communities (Regions). National Parks are declared by the Parliament Act and subject to a common legal framework, i.e. the Law on National Parks Network (Table 3).

Table 3. Institutional context of the Natural Protected Areas in Spain

	National Parks	**Natural Parks, Nature Reserves, Natural Monuments and Protected Landscapes**
Legal framework	Parliament Act, subject to the common legal framework, the Law on National Parks Network.	Up to 48 different protection categories derived from 17 regional legislations.
Management models	Managed by the Autonomous Community in whose territory they belong. The management can be direct or through a governing board: Board of Trustees of the Park (advisory body) which supports the Directorate of the Park (technical and executive body). Both professionals and administrative staff of the Park locate in the Management Office, usually settled within or in the limits of the National Park.	Managed by the Autonomous Communities in whose territories they are located, directly or through autonomous agencies. Governing board of the Park (advisory body) which supports the Directorate of the Park (technical and executive body).
Financial support	Central Government (Royal Decree 940/1999) exclusively or supplemented with the regional support.	Regional Government
Socio-economic development support	Direct grants for the socio-economic development of the territory funded by the central government	Subsidies created by the regional governments. Known as the "Green Fund" in Castilla- La Mancha

Source: elaborated by the authors.

The Natural Parks, Nature Reserves, Natural Monuments and Protected Landscapes (figures referred by the Law 42/2007) are managed directly by the Autonomous Communities on whose territory they are located, or through the autonomous agencies. National Parks are managed by the Autonomous Community to whose territory they belong. In the case of those which extend within the territories of two or more autonomous communities, the communities must jointly agree a form of integrated management. The management can be direct or through a governing board (*Board of Trustees of the Park*).

Other institutions managing Protected Natural Areas include the Island Councils of the Canary Islands, the Provincial Councils of the Basque Country, the Balearic Island Councils, and the Provincial Council of Barcelona.

In Spain the Protected Natural areas are funded mainly from the public funds, though even that is not enough to avoid the loss of their biodiversity. Therefore, it is necessary to increase economic resources. This is an important point to consider, especially in the protected areas where the development opportunities are needed to maintain the populations within. On the one hand, money has to be provided by different administrations in order to safeguard preservation and conservation, as well as sustainable development in natural areas. However, the amount of money is really an important obstacle and so is the focus on visitors. On the other hand, many local development groups have obtained grants for local sustainable development initiatives related to tourism. However, in many cases the tourism does not mean that a sustainable development and financing is an unfinished business in many natural areas. There are many things that need to be done, but

there is very little money for financing them. Local initiatives have been developed within the EU policies, such as ERDF, Leader or Life, with different agents involved. They put the emphasis also on tourism or on the initiatives based on tourism, but include other issues as well. In this context one should also consider agricultural grants, but the importance of agriculture in the natural areas is diminishing.

Whether the protected natural spaces achieve their goals depends on many factors, some of them of internal character regarding the nature conservation administration itself, while other being external factors related to different aspects that influence the territory, resources and ecosystems. The protected natural spaces must enhance their capacity to support the complex systems they contain. The dimensions of management capacity include governability (political support, legislation and government capacity), social support (involvement and support of the local community, owners and other social groups), planning instruments (strategic plans, executive plans) and resources (human, financial, infrastructures and knowledge).

Findings and discussion

Normative Trust

The research conducted by Stern (2008a, b) identified two dominating explanatory paradigms in the global conservation community that explained public opposition to parks: the first one, the most important, economic rationalism suggesting that local residents respond primarily to economic stimuli; the second one reflecting themes of democracy and human rights and suggesting that local participation in park management processes is of central importance for defusing park-people conflicts. Furthermore, Stern suggested that local distrust of park managers was the most consistent predictor of active opposition to natural protected areas, which was overshadowing any rational assessments of the benefits and disadvantages associated with the park presence, such as environmental values or local peer attitudes (Stern 2008a, b).

We must remember that our **first hypothesis** was: *the strength of the existing local democracy translates into greater agility and transparency of forms of participation and management of the protected natural space*. To verify this hypothesis we have attempted to analyse the frequency and content of the meetings of the collegiate bodies of both parks, as well as the local population perception of the various environmental tools available to them.

In this sense, we attach particular significance not only to the assessment of scepticism of the members of the associations surveyed in terms of their ability to influence the decision-making process of the Park management – something that could cross out subjectivity – but we also take into consideration the way of collegiate bodies functioning, i.e. the frequency and form, seems to come to support theories that point to a certain weakness of the prevailing democratic culture.

In the case of Cabañeros National Park, the participation institution and support for the management of the national park is a Board of Trustees that has been made up of local, State and regional administrations as well as representatives of associations, organizations and institutions whose interests are related to the National Park. It is a consultative and representative body. It is composed of 24 members and meets once a year. The

representatives of different public administrations (State, regional, local and supra-municipal) make up 53% of its members.

In the case of Serranía de Cuenca Natural Park there is a Governing Board of the Park composed of 35 representatives: 25 of them are institutional while 10 of them have a socio-economic profile linked with the territory. Since the creation of the Park in the spring of 2007, the Governing Board members have met on 7 occasions, first time in October of the same year it was established in to designate their main offices and to approve the location and contents of the three Interpretation Centres previously proposed by the regional government. Later on, the Governing Board had three meetings in 2009 coinciding with the presentation of the projects for the Interpretation Centres; information on the forest fires which ravaged a part of the Park that summer; and elaboration and approval of the statutes of the Governing Board. Among other things the statutes referred to the establishment of four commissions: Permanent Commission, Local Administration, Conservation Commission and Commission for socio-economic development, the last one having met only once in July 2010. The Governing Board had again a meeting for the fifth time in November 2010 and since that time it has met twice by 2013.

From our analysis of the questionnaires it appears that the concept of reciprocity and solidarity has a pragmatic aspect of common interest that is more tangible and able to be instrumentalized than the generic concept of trust which appears to be given usually for free, except for the previous negative experiences. On the other hand, this is consistent with the social capital theory which considers the trust index to have an opposite trend regarding group size and group closeness. These same contradictions are present in the various theories on the role of social capital in mountain areas; some scholars stress that the mountain regions are still characterised by a system of strong community relationships (Magnani and Struffi 2009) compared to other types of rural areas, while others claim that the mountain communities are often "divided societies" (Osti 2000) where the accelerated change brought by modernisation has flanked long-standing rivalries among families with new conflicts between professional categories (farmers, cattle breeders, tourist entrepreneurs) pursuing different and sometimes contrasting economic goals.

Regarding the information on the environmental tools (Table 4) the assessment and the degree of agreement on the possibilities of participation and management by the local population is much greater in Cabañeros than in Serranía de Cuenca, both among the members of the collegiate bodies and among the associations interviewed. Thus, the average score for the statement "Managers and representatives of the Park take into account the opinion of the local people" among the representatives of Serranía de Cuenca is situated between "strongly disagree" and "disagree". On the other hand, we cannot fail to note that when inquiring about the interest of the population to know something more about the functioning of the protected natural area the answers of the members of the collegiate body are more sceptical than those of the associations contacted; this seems reflecting problems of communication and absence of a real culture of participation in the management of protected natural areas.

The Participatory and Negotiated Territorial Development (PNTD) approach sets out strategic lines of territorial development to overcome the challenges described above. The debate on the danger of including marginalized and disadvantaged actors in a process of negotiation, dialogue, without strengthening their bargaining power and realizing their rights remains open. Also, negotiation processes have to be conducted so that the

Table 4. Information about environmental tools

Do you think the local population living in/close to the Park you represent feels identified with the following statements regarding the management bodies of the Park? / Do you agree with the following statements regarding the management bodies of the Parks?	CABAÑEROS NATIONAL PARK				SERRANÍA DE CUENCA NATURAL PARK			
	Members of the Board of Trustees of the Park		Associations		Members of the Governing Board of the Park		Associations	
	Mean	Statistical Deviation	Mean	Statistical Deviation	Mean	Statistical Deviation	Mean	Statistical Deviation
1. The information that you are interested in comes to you clearly in time / The information of the management bodies of the Park we are interested in comes to us clearly in time	**2.6**	0.5	**3.3**	0.7	**2.5**	0.7	**2.7**	0.7
2. There are opportunities to discuss matters with the managers of the Park	**3.2**	0.4	**3.1**	0.9	**2.6**	0.8	**2.0**	1.2
3. They know to whom and where to go to solve problems related to the management of Park / I know to whom and where go to solve Park management problems affecting me	**3.0**	0.0	**3.0**	0.7	**2.9**	0.7	**2.5**	1.0
4. Managers and representatives of the Park take into account the opinion of the local people	**3.0**	0.0	**2.9**	1.2	**2.3**	0.9	**1.8**	1.0
5. There are tools available to the population to consult or submit claims, if necessary, to the Park managers / There are tools at my disposal to consult or to submit claims, if necessary, to the Park managers	**2.8**	0.4	**3.0**	0.7	**2.6**	0.7	**2.4**	0.9
6. They feel interested to know more about the Park's operation / I am interested to know more about the Park's operation	**2.8**	0.4	**3.3**	0.7	**2.6**	0.6	**3.1**	1.3

Response categories: 1= strongly disagree; 2= disagree; 3= agree; 4= strongly agree.

fundamental human rights (political, socio-economic, cultural, and environmental) of the actors are not questioned (FAO 2005).

As we have already pointed out in the introduction, we should not forget that mere timely and exclusive conservation of some valuable ecosystems, developing minimum activities of management and administration, and with a naturalistic approach excluding and marginalizing sometimes the demands and interests of the affected local people, is today an obsolete approach renewed from the seventies of the last century as a result of the implementation of international proposals, and especially in the last decade of the last century when it passed to a more integrated and globalizing paradigm leaning directly on planning tools (territorial, physical, economic, etc.) and trying to reconcile the claims of conservation with the socio-economic and territorial space environment. The central challenge is to find the ways of putting people back into conservation. Such participation will not be easy as the term itself is interpreted in many different ways. The new vision will need a new professionalism, new supportive policies, and innovative inter-institutional arrangements (Pimbert and Pretty 1995).

On the other hand, establishment of some protected natural areas can involve, and indeed occasionally has led to, changes not only with respect to the symbolic appropriation of the territory (landscape, etc.) but also of the natural resources by other social actors in the newly protected area. In this way the areas historically shaped as structural elements of local identity and claimed for its own, which have been used for survival and recreation of the local population (grazing, firewood, hunt, mycology, etc.) until the declaration of such natural space, become appropriated by the dominant social classes and/or more educated people raising the gap between visitors and users frequenting such spaces and traditional residents (Picon 1989).

The declaration of a protected natural area involves a series of legal and administrative easements and charges, as well as social, economic and administrative changes that are often considered negative as they directly affect both the local population and the owners of the heritage (communal, municipal, private individuals, etc.), because for good measure the intrusion of the Administration in the social life of the affected population at different scales, especially in its socio-cultural and territorial setting, carry a historic burden in rural communities. All this maze of conflicts can be triggered by public performances against the socio-economic function and development with an implicit presence of the protected natural area.

Territorial Expectations

The **third hypothesis** reads that *trust in collective action depends on the role played by the Administration in terms of responses to individual and collective needs*. For testing purposes we evaluated programs and investments made in the field of socio-economic development (quantity, continuity and planning) linked directly with the Declaration of a protected natural area.

Obviously the territorial expectations are depend on the experience and knowledge of reality available to the stakeholders, resident or not, on the territory affected by each of the two analysed Parks (Table 5). Thus, the fact that until 2006 the administration and management of the National Park have relied on the central administration only from which important subsidies came and still come could explain the ambivalent relationship of the population with the regional administration. Equally, based on their particular national park status, the flagship of protected natural areas network, and the effort made in terms of socio-economic development by the Administration, one can understand the favourable valuation of interviewees in Cabañeros when asked if the Declaration has enabled to strengthen support to the inhabitants of the area and create new opportunities for economic development.

Since the end of the 1980s the central government has been funding a set of measures designed to contribute to the maintenance of national parks by providing socio-economic compensations to the local populations. Since that time subsidies have gone to initiatives with a dual purpose: on the one hand, the strengthening of protected areas and, on the other, offset for the populations of the areas of socio-economic influence (hereinafter ASEI). In any case, up to the annual call for 1998 only the councils located in the ASEI could be beneficiaries of aid. Since 1999 the new rules explicitly provide that public aid or subsidies are intended to promote sustainable development and also the improvement of the quality of life of people living in the ASEI of the parks. But one of the most interesting contributions will be the one relative to the extension of beneficiaries from

Table 5. Territorial expectations

The declaration of this Protected Natural Space has allowed:	CABAÑEROS NATIONAL PARK				SERRANÍA DE CUENCA NATURAL PARK			
	Members of the Board of Trustees of the Park		Associations		Members of the Governing Board of the Park		Associations	
	Mean	Statistical Deviation	Mean	Statistical Deviation	Mean	Statistical Deviation	Mean	Statistical Deviation
1. To increase the subsidies to the inhabitants of the area	**2.8**	0.4	**3.2**	0.8	**2.4**	1.0	**1.9**	1.1
2. To create new opportunities for economic development	**3.2**	0.8	**3.6**	0.5	**2.6**	1.0	**1.9**	1.0
3. To Protect the natural environment	**3.8**	0.4	**4.0**	0.0	**2.8**	1.0	**2.6**	0.9
4. To preserve the cultural heritage	**2.8**	0.4	**2.2**	0.4	**2.3**	0.8	**2.6**	0.9
5. To enhance the recreational use of the area and to attract tourists	**3.0**	1.0	**3.8**	0.7	**2.3**	0.9	**2.6**	0.9
6. To generate conflicts and problems in the local population	**1.8**	0.4	**1.3**	0.7	**2.2**	0.5	**1.6**	0.5
In general, do you agree with the following statements?								
7. I trust in the operation of the companies in my territory	**2.8**	0.4	**3.2**	0.8	**2.6**	0.5	**2.6**	0.7
8. I am confident in the future of my territory	**3.4**	0.5	**3.0**	0.7	**3.1**	0.7	**2.8**	1.1

Response categories: Questions 1= very little, 2= little, 3= quite; and 4= much. / Questions 1= strongly disagree; 2= disagree; 3= agree; and 4= strongly agree.

being exclusively councils in these areas to encompass a wider range. The help may be requested also by local governments and groupings of municipalities of the ASEI; private enterprises whose main activity is developed or run in the ASEI and whose headquarters are located in such a zone; residents and private owners that live in the ASEI; and non-profit institutions which develop actions in the field of conservation of the national parks in the ASEI.

If we take the data provided by the Management Office of the National Park as a reference, in the period 1999–2012 more than EUR 12 million have been invested in socio-economic promotion from the national budgets, of which 63.7% have been designed for councils of the Park ASEI. It is followed, although at a distance, by the amount earmarked for the companies and self-employed which are the second block of beneficiaries of this type of aid representing 16.9%; 15.09% being allocated to individuals, associations and institutions which since 1999 have considerably increased their weight. Finally, the beneficiaries which have received the lowest amount of aid in order to develop their projects and also for some years have not enjoyed such support (1999, 2002 and 2004) have included the associations of municipalities totalling the 4.21%.

In addition to the direct grants for the socio-economic development of the territory, the National Park has made numerous investments in the provision and improvement

of infrastructure within the Park, which has resulted in its appeal and ability to attract visitors and tourists. The infrastructure includes the visitors' centres *Casa Palillos* (with botanical and ethnographic path) and *Torre de Abraham* (botanic-fluvial path) as well as the visitors' centre of *Castellar de los Bueyes* mountains in Horcajo de los Montes, pending opening.

Furthermore, the ASEI of Serranía de Cuenca Natural Park has benefited from subsidies granted by the regional government of Castilla-La Mancha, known as the "Green Fund", significant but far more limited than the those perceived by the population of the ASEI of national parks. Therefore, the assessment of the increase in support to the inhabitants of the area and the new opportunities of economic development of the region are seen with scepticism, especially among the representatives of the associations interviewed. The complete data series concerning the grants for the socioeconomic development of the ASEI of Serranía de Cuenca covers the calls made from 2007 to 2010, when the last call was made at the end of the year with resolutions adopted at the end of 2011. As evidenced by the data consulted, the annual amount of the subsidies has been declining progressively until a little more than 50% of the initial values with a distribution between councils, within a limited amount of €30,000 per municipality, businesses and self-employed (intended for agricultural activities, hotels and tourism), and individuals (with a maximum of €3,000) for conditioning and improvement of housing, including the heating system, all of which raises investment to more than 2.3 million Euros. In terms of direct investments made by Castilla-La Mancha regional government the three visitors' centres built inside the park are the most noteworthy (with a total investment between building cost and exhibition display of €4,110,468.72), although only one of them was opened in the spring of 2010, while the three are finished and waiting to find a viable economic maintenance solution in the current situation of serious economic crisis. In fact, the only one opened, the Uña visitors' centre closed in December 2011 and currently still pending a solution for its reopening.

In terms of environmental protection, virtually all interviewees in the ASEI of Cabañeros National Park agree with the statement that the declaration has allowed improving their chances, while the interviewees of Serranía de Cuenca Natural Park are less enthusiastic about the matter. In this regard, it is worth remembering that while Serranía de Cuenca is an open space without barriers or restrictions on the entry from any access point, where there are privately owned places such as the *Ciudad Encantada* that draws "real floods" of visitors without record, not to mention seasonal hunters, visitors going to the rutting grounds in the autumn, and, in general, hikers and tourists who frequent the Park, in the case of National Park the space is fenced and access is limited and controlled by the visitors management system. In the evolution of visits to the latter a significant increase is perceived from the moment when it is declared National Park (1995), a date on which the number of 15,000 visitors was exceeded and which was a starting point for a sustained visitors increase over the years. In 1998, the Park had more than 50,000 visitors a year and in the year 2012 this number already exceeded 81,000 annual visits. This suggests that gradually the widespread trend of Cabañeros visits has been growing despite the limitations and restrictions that the Park suffers when it comes to channel flows (it is a National Park with a lower rate of visitors/hectare per year of the entire Spanish network), one of the main reasons of the conflict between the Directorate of the Park and the agents involved in rural tourism in the area (accommodation, tourism entrepreneurs, etc.).

Moreover, conservation of the cultural heritage stimulates similar responses among interviewees in Cabañeros and Serranía de Cuenca who are of the opinion that the declaration of the space has allowed to improve conservation between little and quite. This response is probably due to the scarcity of the Assets of National Interest or monuments of some notoriety as well as a lack of appreciation of intangible goods or the landscape as a cultural heritage. It is an endless source of surprise that in the case of Serranía de Cuenca that is a space traditionally much more frequented by hikers and tourists than Cabañeros, and has a tourist infrastructure, including both accommodation and vacancies, much more developed than the ASEI of the National Park, the assessment of the effect that the declaration has had on the increase of the tourist/recreational use of the area is much more positive in Cabañeros than in Serranía de Cuenca. Certainly, the recent tourist development of the National Park, adapted to the new demands of rural tourism compared to the infrastructure of the Natural Park that has become partly obsolete, explains this paradoxical situation.

Recently, by end of 2009, the Cabañeros National Park has signed the *European Charter for Sustainable Tourism in Protected Areas*, an initiative which aims to move forward effectively based on the principles of sustainable tourism in protected natural areas, granting accreditation to those who have made a commitment to meet this objective. The European Charter for Sustainable Tourism was developed between 1995 and 1998 by the professionals and managers of the Park and representatives of the tourism industry and is funded under the LIFE programme of the European Union.

Last but not least, our **second hypothesis** reads that *situations of social conflict associated with the Declaration, and to the management of the protected natural space reflect the role played by the population (the state of involvement of local society in these spaces)*. In order to verify this idea we have attempted to find the perception of the members of the collegiate bodies and of the local associations about the generation of conflicts and problems among the local population.

To complete this set of questions, when interviewees were asked about the impact of the declaration in the emergence of conflicts with local population, the first thing that should be noted is that the answers obtained as a whole indicate "very little" or "little" and only in the case of the members of the Governing Board of the Natural Park scores placed its value between "little" and "quite". The perception of the territory, as well as its management by the agents involved therein, can crystallize in very different ways (conflicts, struggles, co-operation, cohesion, etc.). In that sense, the analysis of the set of allegations to the draft of the *Master Plan for the Use and Management* (hereinafter MPUM) of Cabañeros can be considered an indicator of the different interpretations of space linked with the National Park, collecting different points of view from stakeholders that interact in the territory.

The analysis of themes or causes of allegations presented gives us a classification including two major thematic blocks. On the one hand, the restrictions associated with the traditional uses permitted or not following the future adoption of the MPUM, which scored 26 claims in total, and on the other, those related to infrastructure, equipment and facilities, generating other 25 reports, and that added up to 14 filed due to problems of access to the Park accumulate 39 allegations. As for the remaining categories, they have been classified as the claims, except those relating to coordination between agents (Directorate of the Park, owners, local population, etc.) with a single report, accumulated

between 6 and 16 reports. Tourism within the ASEI of the Park is one of the recurrent themes of many allegations, in particular 16, many of them filed by mayors of the affected municipalities which saw limited expectations.

As expected, the coincidence between the various stakeholders in the four sections is limited. In the case of public use, the Directorate of the Park is in favour of visits controlled by signposted routes, including visits in off-road vehicles; at the same time, it aims to alleviate the tourist seasonal standstill as the visitors are concentrated mainly in spring and autumn (the rutting season) while summer and winter numbers of visitors flows descend significantly. Instead, the councils seek to establish more routes in the Park and put ever growing expectations for the region on tourism which directly support the tourist entrepreneurs who wish to increase the number of visitors to the Park (Caro et al. 2009).

Regarding to development initiatives positions are equally diverse. In the opinion of the Directorate of the Park they should support the initiatives of rural houses, assuming a switch of the regional economy towards the services as a complement to farm income through the financial support from the rural tourism revenue in the area. On the other hand, the association of local people concerned (*Aprofinca*) defends its point of view expecting a greater control of aid and asserting that there are few aids to the owners and farms. However, all actors believe that it is a fundamental support for the social and economic development of the region.

The opinions are also diversified, if we look at the opinion around the line of subsidies granted by the park. For the Park itself they are considered fundamental in guiding the economy of the area, on the other hand, local authorities and tourism entrepreneurs say they ignore the criteria used by the Park Office for granting them, and similarly *Aprofinca* argues the subsidies are targeted at the local governments which hinder access to them.

Finally, as for to the conservation issue – one of the fundamental pillars of the declaration of any protected area – the Park professionals defend clearly their stance that points towards the conservation of species of flora and fauna as well as the need for research on them and, where there have been alterations of the ecosystem, they are committed to environmental restoration. Now, this pure conservationist stance is not shared by the municipalities which consider the restrictions to be excessive and refer to the management as overly bureaucratic even in conservation. The municipalities are committed to management models including consensus and participation into policy-making concerning the Park. In this sense, *Aprofinca* argues the suitability of financial compensation to landowners who depleted their activities as a result of the limitations of use on the farms.

In any case, the ongoing disagreements on the use and management of the National Park have resulted in that the *Natural Resource Management Plan* has been annulled by the Constitutional Court while the *Master Plan for the Use and Management* has not been still approved after a decade of processing.

In the case of Serranía de Cuenca, where the conflicts have been apparently less acute (there was no significant problems for the declaration of the protected area or the approval of the *Natural Resource Management Plan*), however, these are perceived more intensely by the members of the Governing Board, perhaps because of a greater susceptibility to the pitfalls and/or clashes of interests that are arising, perhaps because its short life that has not yet favoured the emergence of a culture of effective conflict management. The truth is that conflicts of use have broken out between different stakeholders. The ecological status of the river Júcar has been of concern during dry years. Due

to the rain shortage and a reduced flow released into the river from La Toba dam it has experienced a critical situation of flow almost drying up a stretch of the river. The section of the river (around 20 km) in question is subjected to an alteration of its flow regime by the hydroelectric development in favour of the company Gas Natural-Unión Fenosa. This situation led to a series of meetings both with the concessionaire (Gas Natural-Unión Fenosa) and the Júcar public Water Authority resulting in a number of commitments that would maintain good ecological conditions in the stretch between La Toba dam and Villalba waterfall.

Another area of concern is the conflict between the preservation of birds and sport-recreational activities in different areas of the Park. The pressure of active tourism options on some places is excessive. Therefore information campaigns, renewal of signalling and discussions between the sport enterprises and the Park professionals started. We cannot forget the clashes between traditional farming and certain forms of active tourism (including the emergence of trial motorcycles and quads) that cause conflicts and damages coupled with the problems of erosion and pollution. All of which should lead to the necessary regulation and control of this type of use with priority for traditional grazing.

Though this is not an exhaustive list, we should also remember the different perceptions and expectations of the local population and Park professionals that manifest themselves when, for example, the need for a joint study on treatment of waste water and methods of purification of the municipalities of the area are referred to, thus, although the mayors in the Governing Board do not refuse to deal with them they understand that the priorities of the territory are of the socio-economic nature in order to fix population and promote alternative development, tackling the problem of depopulation that is now threatening the Park.

After analyzing the different aspects and answers about the territorial expectations of both protected areas it is not surprising that those interviewed in Cabañeros show greater confidence in the operation of the companies in its territory as well as in the future of the same. The experience gained in managing conflicts by different Park professionals, as well as the support of the Administration in the form of subsidies and direct investments justify that, despite being a deprived rural territory, plagued by problems of depopulation and ageing, its inhabitants have a more favourable perception of the functioning of the collegiate body and they have expectations opened up by recent developments in rural tourism.

Concluding remarks

Conflicts between conservation objectives and neighbouring local populations have constantly accompanied the nature protected areas throughout Europe. The two case studies in our research reveal that a complex mixture of factors conceptualised in an explanatory framework shows the general attitude towards the protected areas. The components showing the strongest correlations with the general attitude are (lack of) participation, economic benefits, environmental attitudes and communication (Ruschkowski and Mayer 2011).

First of all, we would mention that "trust" can only be understood in its socio-cultural and territorial context and mutual expectations are the "social glue" that binds most of small rural communities. In this respect, and in relation to the socioeconomic development,

reciprocity, solidarity and "territorial trust" or trust in the future of the county appear to emerge as much more sensitive indicators than generalized, personal or institutional trust.

Furthermore, the results of the implementation of socio-economic development programmes yield very different outcomes; the reasons could be the amount of subsidies, the degree of efficiency of Park professionals and technical teams of the Local Action Groups, the excessive length of some of the selected territories, located in mountain and disjointed regions, and especially the need for converging on the same territorial problem/problems construction by a number of people and/or entities with alternative identities and alliances in relation to the problem at stake; in this framework the network of alliances and the consensus on which it is based is always precarious and context dependent.

The Differences between the territories as far as development is concerned can be better understood as the result of historical processes in which there has been a certain combination of social and institutional relations. The existence of a rich social capital is not the only "prerequisite" for the development but would have the dual ability to be a resource that could mobilize other resources (economic, political, and cultural capital) in order to generate or expand the economic, cultural, political and social "benefits" always in dialectical relationship.

In any case, bearing it all in mind, we cannot forget that participation tools and culture need to be improved. Meetings of the collegial bodies are scarce and in most cases only serve to approve actions and projects already carried out by the Directorate of the Park, all of which explains the suspicion of the municipal representatives of the territories included within the ASEI as well as of the socio-economic stakeholders. To all of this we must add the fact that subjects and concerns on the agenda of each stakeholder rarely match exactly and the local population has the impression that their interests and opinions are postponed for the benefit of the objectives of Park conservation and its potential tourist function. What is needed this is rethinking of conservation science and practice itself. This will need to draw on emerging experience of post-positivist science and philosophy from other fields as well as ecology itself (Pimbert and Pretty 1995). This new vision for conservation implies new roles for project staff and local people in the protected area management. This calls for a greater emphasis on training in communication rather than technical skills. Outside professionals must learn to work closely with colleagues from different disciplines or sectors as well as with the rural people. The challenges of adapting the ingredients of participatory community based successes to the design and management of national parks and other protected areas are therefore enormous. But it would be socially irresponsible not to pursue actively this approach in the contexts where rural people directly depend on biological diversity and natural resources. According to West et al. (2006) we also would like to see more work specifically focused on what we see as a simplification process that takes place when biologists and other natural scientists write about, think about, and attempt to legislate on the social relations between people and their surroundings (Stern 2006). In this simplification process, rich and full of nuances social interactions connected to what natural scientists see as the environment are condensed to a few easily conveyable and representable issues or topics.

Coming back to our case studies, Cabañeros was declared first a Natural Park and then the National Park in 1995, definitely leading to a social opening of the territory. Previously a debate had erupted about its possible militarization but the citizen opposition managed to turn it as a natural space of established reputation, highlighting the natural

and landscape values which preserves the ecosystem. Thus, the Declaration has certainly yielded positive consequences, but also negative ones. Among the former, the "social discovery" of this region in the 1980s after it broke in the media as a possible NATO operations Centre. Moreover the territory benefits from European funds which are promoting a progressive economic shift towards a certain tertiary sector with the activities related to the environment and tourism (rural, green, etc.) dominating. This all supposed, along with grants from the National Park Autonomous Agency, a significant improvement in the quality of life of the local population (improvements in housing, infrastructure, roads, services, etc.). That said, the declaration has failed to stop the demographic reduction that show all municipalities of Cabañeros ASEI, which have been losing population steadily with the consequent ageing and the lack of generational turnover due to low birth rates – a process concerning the structural situation in which are involved aspects such as lack of specialized health services and above all the lack of labour expectations for young people. Likewise, actors interested in tourism (municipalities, entrepreneurs, etc.) are still concerned about the problems of public use management and traditional use in the area, as well as they continue striving to increase the number of visitors to the Park.

Moreover, the territory of Serranía de Cuenca Natural Park has poor experience as protected area, a little more than six years, and an exclusive reliance on funds and regional policies, much less generous than those intended for the National Park. Its recent declaration could be the reason for which, despite the absence of noticeable conflicts in its origin, the dissatisfaction expressed by the associations surveyed with the work of the collegiate body and the reservations of the Governing Board about the interest and commitment of local people respond to failures in the participation and management procedures of the Park, still not yet tested and with a clear shortage of professionals (in addition to the Director, the Park Office only has a technician and an administrator), which would explain the gap between the initial expectations of local population and the reality and impact on the socio-economic development of the territory.

On the basis of the foregoing we also support the conclusions of some of the European researches mentioned above, in the sense that confidence in collective action depends on the role played by public administration in terms of responses to individual and collective needs. In other words, the lack of public services results in a community that does not rely on collective action; and, consequently, the will to build social capital appears as very weak. Consequently, when a community is poor in social capital, the public administration must provide a better level of public infrastructure/facilities/services in order to create an atmosphere of trust in the collective action.

Acknowledgments

The article was prepared as a part of the research Project "Análisis Territorial del Capital Social en Espacios Naturales Protegidos: Indicadores de desarrollo socioeconómico" (CSO2008-02919) funded by the Spanish Ministry of Science and Innovation.

The authors jointly wish to thank the editors of the Rural Studies / Studia Obszarów Wiejskich and the two anonymous reviewers for their inspiring and detailed constructive comments on an earlier draft of this paper.

References

Árnason A., Shucksmith M., Vergunst J. (eds.), 2009, *Comparing Rural Development. Continuity and Change in the Countryside of Western Europe*, Perspectives on rural policy and planning Series, United Kingdom, Ashgate.

Bryden J. M.,1998, *Development strategies for remote rural regions: What do we know so far?*, paper presented to the OECD International Conference on *Remote Rural Areas: Developing through Natural and Cultural Assets*, Albarracín, Spain, 5–6 November 1998.

Caro J., Díaz S., Sunyer Lachiondo C., Viñuela J., 2009, *Contribución del Parque Nacional de Cabañeros al Desarrollo Rural del entorno*, [in:] Sunyer Lachiondo C. (ed.), *Eco-emprendedores: Retos para la puesta en valor de los espacios protegidos*, TERRA centro para la política ambiental, Madrid, pp. 23–30.

Copus A., Spikeman K., 2003, *The AsPIRE Conceptual Framework*, Final Report of AsPIRE Project, pp. 13–49 (unpublished).

Florido Trujillo G., Lozano Valencia P. J., 2005, *Las figuras de protección de los espacios naturales en las comunidades autónomas españolas: una puesta al día*, Boletín de la Asociación de Geógrafos Españoles, 40, pp. 57–81.

Garayo Urruela J. M., 2001, *Los espacios naturales protegidos: entre la conservación y el desarrollo*, Lurralde, 24, pp. 271–293.

Gomez-Pompa A., Kaus A., 1992, *Taming the Wilderness Myth*, Bioscience, 42 (4), pp. 271–279.

FAO, 2005, *Participatory and Negotiated Territorial Development (PNTD)*, Natural Resources Management and Environment Department.

Harvey D., 1989, *The Condition of Postmodernity: An Enquiry Into the Origins of Cultural Change*, Cambridge, United Kingdom, Blackwell.

Katz C., 1998, *Whose nature, whose culture? Private productions of space and the preservation of nature*, [in:] Braun B., Castree N. (eds.), *Remaking Reality: Nature at the End of the Millenium*, London, Routledge, pp. 46–63.

Lee J., Árnason A., Nightingale A., Schucksmith M., 2005, *Networking: Social Capital and Identities in European Rural Development*, Sociologia Ruralis, 45 (4), pp. 269–283.

Magnani N., Struffi L., 2009, *Translation sociology and social capital in rural development initiatives. A case study from the Italian Alps*, Journal of Rural Studies, 25, pp. 231–238.

Martínez Vega J., Calcerrada R., 2003, *Repercusión de los espacios naturales protegidos en la economía rural española*, Serie Geográfica, 11, pp. 41–60.

McCleave J., Espiner S., Booth K., 2006, *The New Zealand people-park relationship: An explanatory model*, Society and Natural Resources, 19 (6), pp. 547–561.

Mulero Mendigorri A., 2002, *La protección de espacios naturales en España: antecedentes, contrastes territoriales, conflictos y perspectivas*, Madrid, Mundi-Prensa.

Nahapiet J., Ghoshal S., 1998, *Social capital, intellectual capital and organizational advantage*, Academy of Management Review, 23 (2), pp. 242–266.

Osti G., 2000, *LEADER and partnerships: the case of Italy*, Sociologia Ruralis, 40 (2), pp. 172–180.

Picon B., 1989, *Les espaces naturels sont-ils des supports de differentiation sociale?*, [in:] Fourneau F. (ed.), *Supervivencia de los espacios naturales*, MAPA-Casa de Velázquez, Madrid, pp. 109–117.

Pimbert M. P., Pretty J., 1995, *Parks, People and Professionals: Putting 'Participation' into Protected Area Management*, United Nations Research Institute for Social Development, International Institute for Environment and Development, World Wide Fund for Nature, Discussion Paper, 57, Geneva.

Pretty J. N., 1994, *Alternative Systems of Inquiry for Sustainable Agriculture*, IDS Bulletin, 25 (2), IDS, University of Sussex, pp. 37–48.

Pretty J., Smith D., 2004, *Social Capital in Biodiversity Conservation and Management*, Conservation Biology, 18 (3), pp. 631–638.

Ruschkowski E. Von, Mayer M., 2011, *From Conflict to Partnership? Interactions between Protected Areas, Local Communities and Operators of Tourism Enterprises in Two German National Park Regions*, Journal of Tourism and Leisure Studies, 17 (2), pp. 147–181.

Selby, A., Petäjistö, L., 2009, *Uneven entrepreneurial responses to demands for tourism-related services adjacent to three national parks in southern Finland* (Working papers of the Finnish forest research institute 127), Vantaa, Retrieved December 19, 2009, from http://www.metla.fi/julkaisut/workingpapers/2009/mwp127.htm

Shortall S., 2008, *Are rural development programmes socially inclusive? Social inclusion, civic engagement, participation, and social capital: Exploring the differences*, Journal of Rural Studies, 24, pp. 450–457.

Smith N., 1990, *Uneven Development: Nature, Capital and the Production of Space*, Oxford, United Kingdom, Basil Blackwell.

Smith N., 1996, *The production of nature*, [in:] Robertson G., Marsh M., Tickneret L., Bird J., Curtis B., Putnam T. (eds.), *Future/Natural: Nature, Science, Culture, Routledge*, London, pp. 35–54.

Stern M. J., 2006, *Understanding local reactions to national parks: the nature and consequences of local interpretations of park policies, management, and outreach*, PhD thesis, Yale University, New Haven.

Stern M. J., 2008a, *The power of Trust: Toward a Theory of Local Opposition to Neighboring Protected Areas*, Society & Natural Resources, 21 (10), pp. 859–875.

Stern M. J., 2008b, *Coercion, voluntary compliance and protest: The role of trust and legitimacy in combating local opposition to protected areas*, Environmental Conservation, 35 (3), pp. 200–210.

Stoll-Kleemann S., Job H., 2008, *The relevance of effective protected areas for biodiversity conservation: An introduction*, GAIA, 17 (S1), pp. 86–90.

Tsai W., Ghoshal S., 1998, *Social capital and value creation: The role of intrafirm networks*, Academy of Management Review, 41 (4), pp. 464–476.

West P., Igoe J., Brockington D., 2006, *Parks and Peoples: The Social Impact of Protected Areas*, Annual Review of Anthropology, 35, pp. 251–277.

STUDIA OBSZARÓW WIEJSKICH
2015, volume 38, pp. 77–96
http://dx.doi.org/10.7163/SOW.38.5

KOMISJA OBSZARÓW WIEJSKICH
POLSKIE TOWARZYSTWO GEOGRAFICZNE
www.ptg.pan.pl

INSTYTUT GEOGRAFII I PRZESTRZENNEGO ZAGOSPODAROWANIA
POLSKA AKADEMIA NAUK
www.igipz.pan.pl

ENVIRONMENTAL CHANGES, RURAL OUT-MIGRATION AND SOCIAL DYNAMICS IN HIMALAYAS

Prakash C. TIWARI[1] • Bhagwati JOSHI[2]

[1] Kumaon University
Nainital – 263002, Uttarkhand, India
pctiwari@yahoo.com

[2] Government Post Graduate College
Rudrapur, Uttarakhand, India
bhawanatiwari@yahoo.com

Abstract: The paper aims at interpreting inter-linkages between environmental changes and rural out-migration and at assessing their impacts on quality of life of rural women with a case illustration of Upper Kosi Catchment, Uttarakhand Himalayas, India. The results indicate that the availability of water, fuel-wood and fodder decreased, agricultural production declined and livelihood opportunities were reduced mainly due to depletion of natural resources. Consequently, the male out-migration increased by 15% during 1981–2011. This increased workload of women by 25%, more than 40% women are under severe threat of a variety of health risks generated mainly due to excess work-load, under-nourishment and lack of hygiene and sanitation.

Key-words: Primary resource developers, ecosystem services, climate change, food and livelihood security, sanitation and health, sustainable development, India, Himalayas.

Introduction

In the Himalayas, due to constraints of terrain and climate, subsistence agriculture constitutes the main source of rural livelihood even though the availability of arable land is severely limited and agricultural productivity is low (ICIMOD 2010). Due to the limitations of subsistence economy, a large proportion of adult male population out-migrates from the region in search of livelihood (Maithani 1996). This phenomenon of exodus of young and able-bodied human resource from the mountains has serious implications not only for economic development, but also for the enrichment of socio-cultural life in the region. This led to feminisation of agriculture and livelihood in the Himalayas (ICIMOD 2010). Consequently, the women of the Himalayas have been often designated as 'primary resource developers', and the burden of living under difficult mountain-conditions falls mainly on women who have to bear the drudgery of scrounging for all primary natural resources including collection of fuel-wood and fodder from shrinking forests, fetching water from increasingly long distances besides taking care of agriculture, livestock, children and aged

members of the family (Maithani 1996). On the other hand, there is severe shortage of adult male labour to work in agriculture and other sectors of rural economy which further acts as a drag on agricultural productivity and retards the process of socio-economic development in the mountains. The cumulative impact of all these physical, socio-economic and cultural constraints in the mountains is leading to grinding poverty, hardship, constant fear of insecurity, a feeling of helplessness, and complete dependence on the outside help. The environment thus created is not conducive to attaining the goals of sustainable mountain development (Maithani 1996; Joshi and Tiwari 2013).

During the recent past a variety of changes has emerged in traditional resource utilization pattern mainly in response to the population growth and resultant increased demand of natural resources, and to the global change, particularly economic globalisation, urbanization and climate change in the Himalayas (IOM 2008; Jain and Nagarwalla 2004; Tiwari and Joshi 2012a). Women experience these changes differently and disproportionately and respond to them in a varying manner because of socially constructed gender relations and environmental sensitivity of mountain ecosystems. They make use of their critical traditional knowledge of and experience with natural resource management and adapting agricultural and food systems to multiple drivers of environmental change, including climate change, globalisation and economic processes, out-migration, and land-use changes in mountain environments, which helped women to become an important agent of sustainable mountain development (ICIMOD 2011). However, these changes have exerted sharply accentuated pressures on local economy through depletion of land, water, biodiversity and forests resources, collapsing conventional production system and increasing community vulnerability to livelihood and food insecurity and increased risks of natural disasters (World Bank 2009; Lonergan 1998). This has augmented male out-migration, and consequently increased hardships of rural women and deteriorated their quality of life (Mamgain 2003; Tiwari and Joshi 2012b).

Conceptual Background

Mountains have long been marginalized from the view point of sustainable development of their resources and inhabitants. However, during the recent years our understanding about the problems of mountain regions and approach to their development has undergone drastic changes (ICIMOD 2010). This is reflected by a deepening anxiety over the depletion of natural resources and disruption of mountain ecosystem services. As a result, the significance of mountain social-ecological systems was acknowledged for the first time on a global scale in Agenda 21 of the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro, Brazil, in 1992 (UN 2012). Mountains include some of the most fragile ecosystems on the planet (ICIMOD 2010) as they are highly sensitive to changes caused by natural as well as anthropogenic factors (Sonesson and Messerli 2002). The drivers of changes range from a variety on natural hazards and disasters to a series of human-induced processes such as population growth, depletion of natural resources, urbanization, economic globalisation and resultant intensification of land use (Tiwari 2000; ICIMOD 2011). Moreover, changing climatic conditions have put pressure on the mountain environments through higher mean annual temperatures and melting of glaciers and snow, altered precipitation patterns, and more frequent and extreme weather events

which are likely to intensify the impacts of other natural as well as socio-economic drivers of change (IPCC 2007; UNEP-WCMC 2002; CIDA 2002; Brody et al. 2008; Daley 2011).

Subsistence agriculture, livestock raising and income generation through small scale trade, and wage and casual labour constitute the main source of livelihood of mountain communities (Leduc and Shrestha 2008). The Food and Agricultural Organization (FAO) of the United Nations has identified more than 75% of the land surface of the world's mountain as unsuitable or marginally suitable for agriculture (Huddleston and Ataman 2003; Messerli and Ives 1997; IFAD 2001). It has been observed that the proportion of poor and vulnerable people increases with elevation (Huddleston and Ataman 2003). There are indications that poverty inequality between mountain people and those living in other areas is currently increasing (ICIMOD 2010). Approximately, 271 million people, which accounts for nearly 40% of the mountain population in developing and transition countries, have been estimated to be highly vulnerable to food insecurity, specifically in Asia and Latin America (Huddleston and Ataman 2003; FAO 2008). High dependency on natural resources and increasing marginalisation are some of important factors for prevailing poverty, food and livelihood insecurity and poor community health, in mountains of developing countries which are further increasing their vulnerability to long-term impacts of global environmental changes (Huddleston and Ataman 2003). The globalizing economy has both positive as well as negative impacts on the mountain livelihoods and economy. The fast growing tourism industry in India, China and Nepal has opened new opportunities for the growth of mountain economy. Furthermore, China and India are the fastest growing economies in Asia, yet, they have the highest poverty ratios. Moreover, the economic globalisation have further increased the vulnerability of the mountain communities to the environmental risks through exploitation of natural resources even in remote and inaccessible areas, particularly in the developing countries. This seems to have further deepened poverty imbalances between highlands and lowlands (Hassan et al. 2005; Huddleston and Ataman 2003).

However, for millennia the mountain communities were developing distinctive mechanisms to adapt to these typical conditions through evolving a range of adaptive measures (UNEP 2004; ICIMOD 2010). Migration of male youth is one the important adaptive measures to constraints of subsistence economy and changing environmental conditions and associated natural and socio-economic risks across all the mountain regions of the world (Sherpa 2007). On one hand, labour migration improves economic conditions and ensures food security in terms of remittance (Kollmair et al. 2006); on the other hand, it has inadvertently created a vacuum in the mountain societies, putting extra responsibilities on women (Sherpa 2007). During 1991–2000, the level of adult male out-migration in the mountainous regions of South Asia exceeded 40% (Rasmussen and Parvez 2002). Draining away of productive human resource from mountains has serious implications not only for the economic development, but also for the enrichment of socio-cultural life in the region (Maithani 1996). Women, being natural resource developers, possess undocumented indigenous knowledge, and their contribution towards preserving the mountain cultures and natural resources is highly significant (ICIMOD 1999). However, the depletion of natural resource base has affected women adversely by increasing their workload and marginality (UNDP 2010).

As a result, women play crucial role in mountain societies as major work force in food production system and as key players in the conservation and management of natural re-

sources and environments (FAO 2010, 2011). Globally, women share is nearly 43% of the work force in agricultural sector, and mountain regions of Asia, Africa, and Latin America it is above 50% (Sherpa 2007). The combined hardship and adversity of mountain living conditions trained the women to respond radically to the forces that were exploiting their natural resources and undermining their livelihoods. Rural women's active participation in the conservation and management of their natural resources laid the foundation for the well known environmental movements in the seventies (Verma 2001). The famous '*Chipko* Movement' (hugging the trees movement) of Uttarakhand – a distinctly non-violent grassroots movement – was organized and lead by illiterate rural women against the exploitative state forestry policy in 1970s. However, women in the Himalayas are particularly vulnerable to the impacts of environmental changes due to skewed power relations and inequitable cultural and social norms, as a result, they are often disadvantaged in terms of power relations and accessing resources, and exposed to increased risks associated with environmental changes (ICIMOD 2010). These risks include further marginalization, exclusion from decision-making and dislocation from access to resources for survival. Women generally have far less access to and control over the resources they manage and conserve (Sherpa 2007). The women of the Hindu Kush Himalayas of Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal and Pakistan share almost similar status; however there are variations in the level of the status due to cultural and social disparities (ICIMOD 1999; Sherpa 2007).

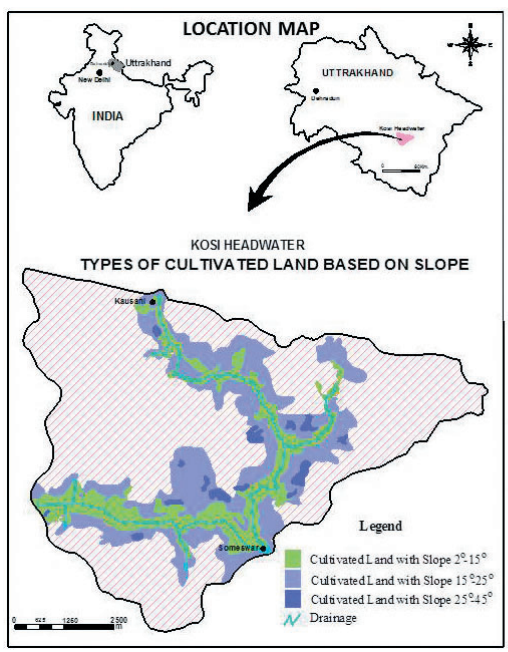
With this in view, the feminists, particularly those from Latin American and South Asian countries, started a movement for women's equality in 1980s, and this lead to the concept of women's empowerment in the South (Stromquist 2002). This challenged not only patriarchy, but also the mediating structures of class, race, ethnicity; and in case of India, caste and religion, and empowerment was considered as a socio-political process that required shifts in political, social, and economic power between and across both individuals and social groups (Batliwala 2007). In the following decade, empowerment had emerged as one of the important components of development discussion and was widely used with reference to women and gender equality by the national and international agencies (Malhotra and Schuler 2005). Since then, a series of developmental programmes have been conceived, formulated and implemented from global to national and local levels for the social, economic and political empowerment of women in developing and less developed countries including India. Nevertheless, the mountain women are not only deprived of the facilities necessary for a good quality of life, but they often remain uninvolved in the development process as well (Nautiyal 2003). As a result, development has failed to bring about significant changes in the quality of life of women, particularly in the remote Himalayan mountains, and women's access to minimum quality of life still remains at a very low level which is in fact reinforcing the feminisation of poverty (Sherpa 2007).

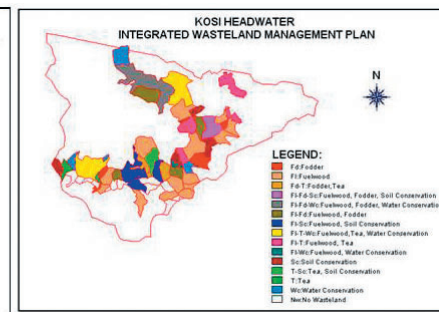
Objective

Besides interpreting the inter-linkages between environmental changes and rural out-migration, the study also aims to explore their impacts on quality of life of rural women with a case illustration of Uttarakhand Himalayas, India.

Research Methodology

The Study Area: The Upper Kosi Catchment which encompasses land surface area of 107.94 km^2 (10,794 ha) between elevations of 1,425 m and 2,650 m above mean sea level in the Lesser Himalayan ranges of the State of Uttarakhand in India (Fig. 1) has been taken as the area of study in the present work. The Upper Kosi Catchment also constitutes the 'headwater' of river Kosi. The total population of the region amounts to 16,080 persons who live in 62 villages. The watershed is one of the most densely populated and agriculturally intensive areas of Kumaon with an average population of 149 persons/km^2, rising to 469 persons/km^2 for villages. The major land use categories are forests, cultivated land and barren land. Subsistence agriculture with animal husbandry as its natural ally constitutes the main source of livelihoods for more than 75% of the population, although the availability of arable land is severely limited. More than 90% of operational land holdings are less than one hectare in size, and the availability of cultivated land is only 0.17 ha per capita, resulting in low agricultural productivity as well as low economic viability of agriculture in the region. Consequently, a large proportion of adult male population out-migrate in the region. Despite increasing trend of out-migration, the community has shown rapid but unsustainable growth, putting increased stress on land, forests, water and other critical natural resources of the region. Cultivation, grazing and deforestation have been extended over large areas leading to ecological instability and food insecurity in the entire river basin. The entire Upper Kosi Catchment has been divided up into four micro-watersheds for comprehensive study of various research parameters included in the study.





Parameters	Status
Total Area	107.94 Sq km
Total Population	16080 persons
Male Literacy	51%
Female Literacy	45%
Land Holdings Less than 1ha	More than 90 %
Per Capita Agricultural Land	00.17 ha/person
Cultivated Land (5% of Total Area)	19%
Irrigated Land (% Cultivated Land)	11%
Households Below Poverty Line	69%

Fig. 1. Upper Kosi Catchment – Location and Socio-cultural Profile

Materials and Methods: Methodology included the following: (a) appraisal of land, water and forest resources based on digital interpretation of multi-date satellite data supported by the ground validation; and (b) generation and analysis of primary socio-economic data for: (I) identification of factors of resource utilization dynamics and environmental changes; (II) interpretation of inter-linkages between resource depletion, local production systems, traditional livelihood and women, and (III) analysis of the impact of depleting natural resource base on the conventional rural livelihood, and appraisal of its effect on rural out-migration and the status and quality of life of women. The information and data required for the study have been generated and collected from varying sources. The primary information has been generated through intensive field surveys and mapping, observations, monitoring, and socio-economic surveys. The secondary methods mainly included the interpretation of high resolution satellite data. Besides, the necessary data and information required for the study have also been collected from the Survey of India (SOI) topographical maps of the area at scale 1:50,000, forest maps, cadastral maps and other records. Panchromatic (PAN) and Linear Imaging Self Scanner (LISS-3) merged data (5.8 m resolution) of the Indian Remote Sensing Satellite 1D (IRS-1D) and Cartosat-2 data (with 1 m spatial resolution) were used for the survey and mapping and appraisal of land, water and forest resources and interpretation of their dynamics. Digital interpretation techniques supported by intensive ground validation have been used for this purpose. The interpretation of satellite data was followed by an intensive reconnaissance survey to get acquainted with the general pattern of land use of the study area (Fig. 2). In order to analyse the resource use dynamics and resultant environmental changes the land use maps were prepared for the years 2001 and 2011 using PAN and LISS-3 and Cartosat-2 data, respectively (Fig. 2). Finally, these land use maps have been converted into spatial layers and crossed with each other using GRAM++ GIS Software package developed by the Centre of Studies in Resources Engineering (CSRE), Indian Institute of Technology (IIT), Mumbai (Fig. 2).

The information pertaining to out-migration was collected from Village Register of each of the 62 villages of the catchment. In order to develop the estimates of production and demand for natural resources the comprehensive socio-economic surveys were conducted using exclusively designed village and household schedules. General information about forest, agricultural land and water resources have been collected from each of the 62 villages using village schedule by interviewing the head and members of Village Council. The information with respect to production and demand of food, fuel-wood and fodder; issues associated with increasing trends of out-migration; and factors leading to transformation of community resource utilization structure and depletion of natural resources and their impact on traditional rural livelihood, resource collection distances, work load on women, community health, water availability and utilization, food consumption pattern, and impact of natural disasters was generated through household surveys conducted in all the villages. The sample size covered 33% of the total households (out of total 2197 households) selecting respectively women headed households (25%), households below poverty line (as classified by the Government of Uttarakhand State) (40%), households solely dependent on agriculture (15%) and families dependent of agriculture and other means of income (20%). The resource deficit, sufficiency and surplus situations with respect to food, fodder and firewood have been determined by identifying the gaps between production and demand (Fig. 3). The environmental status of water resources

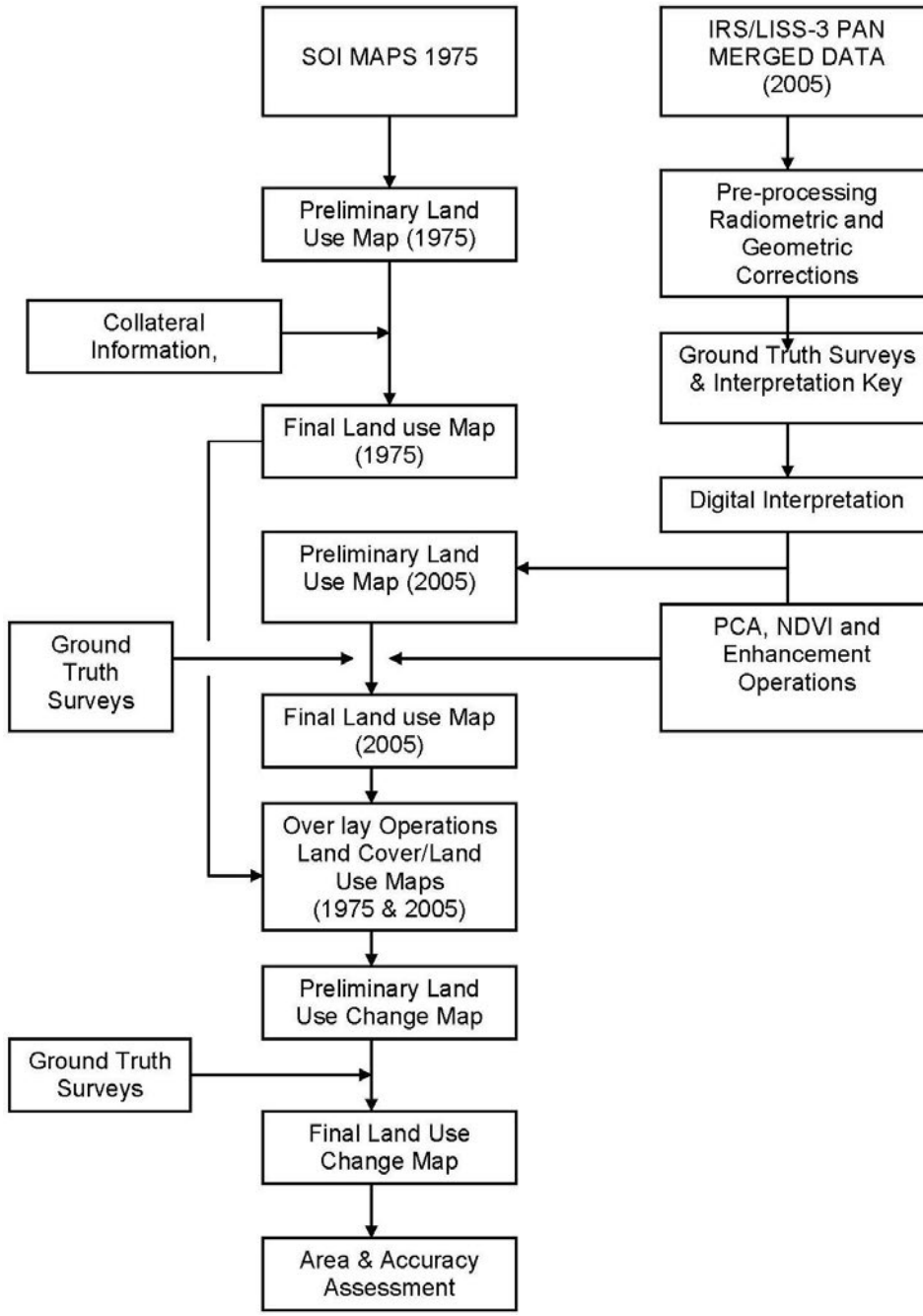


Fig. 2. Methodology for Land Use Change Detection

(streams and springs) has been determined through intensive field surveys, mapping, and interviewing elderly people in the each of the villages of the study region. The travel distances covered to fetch water, firewood and fodder have been calculated by interviewing people in all the villages of the region and then computing the average distance of each village.

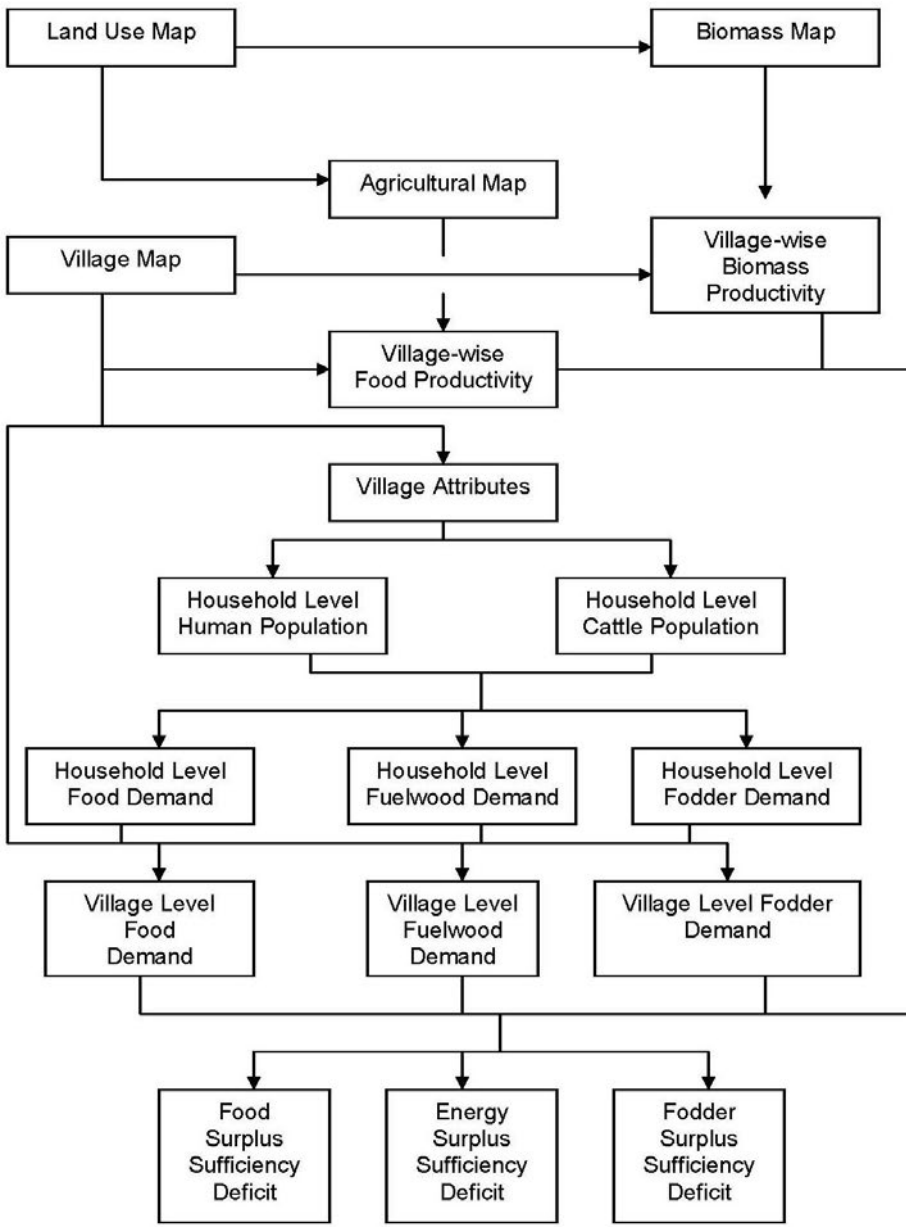


Fig. 3. Methodology for Resources Efficiency Analysis

Results and Discussion

Traditional Agricultural and Food System

As in other parts of the Himalayas, due to constraints of terrain and climate more than 75% population of the region is dependent on traditional subsistence agriculture for its food and livelihood. However, crop farming is not economically viable in most areas of the region due to several geo-environmental constraints and resultant poor agricultural productivity. The availability of arable land is considerable low and size of land holdings is very small. In order to preserve soil fertility level and productivity of land under sustained cropping, the biomass energy from adjoining forests, grasslands and pastures is transferred to cultivated land and this flow of energy is mediated through livestock-population in the form of compost manure and labour to the cultivated land. Therefore, the forests, livestock and agricultural land are the three core components of the Himalayan agro-ecosystem in which the forests are pivotal for the maintenance of agricultural production. It has been estimated that one unit of agricultural production involves on an average nine units of energy from the surrounding forest, grasslands and pastures in conventional Himalayan agricultural system (Singh et al. 1884).

The livelihood and food security in the Himalayas depends mainly on local agricultural production, and the food purchasing capacity of households which in turn is determined by opportunities of local employment and remittances coming from migrated population (Aase et al. 2013; Tiwari and Joshi 2012a). Therefore, the region is likely to face food insecurity in near future as there are clear indications that the agricultural production has declined by nearly 25%, leading to a food deficit of approximately 65% (from local agricultural production) over the last 30 years (Tiwari and Joshi 2012b). This has been mainly due to depletion of critical agricultural resources, such as land, water and forest and climate change (particularly changes in precipitation pattern) and resultant decline in agricultural productivity (Tiwari and Joshi 2012a, b). Furthermore, it would be difficult to fill up the food deficit gap in the near future as the purchasing power of local people has declined due to loss of local livelihood opportunities in traditional forestry and agricultural sectors (Tiwari and Joshi 2012b). Due to constraints of subsistence economy the intensity of cropping is as high as 168% (Pant 2000), and a large proportion of rural youth-male population out-migrates of the region in search of livelihood (Hoermann and Kollmair 2009; Tiwari and Joshi 2012b). This is expected to have long-term impact on the food security in the region in terms of both availability of and access to food which will particularly affect the poor and socially marginalized people who constitute nearly 75% of the total population. This will have serious implications for fundamental welfare-programmes ranging from poverty-alleviation to climate change adaptation in the region and will affect particularly the rural women.

Traditional resource utilization pattern in the region has been changing fast mainly in response to population growth (average more than 1.5 percent/year) and an increasing economic and social marginalization (Tiwari and Joshi 2012a, b). The impacts of changes in community resource utilization structure are clearly discernible in terms of the intensification of land use and the resultant environmental changes (Tiwari 2000). Agriculture is being extended to forests and marginal and sub-marginal lands, and pastures are turning into waste and degraded land due to overexploitation and resultant decline in productivity. With a rapid growth of population the pressure on cultivated land has increased,

and consequently, the per capita availability of cultivated land is merely 0.17 ha/person against a minimum of 0.2 ha/person as required for practicing agriculture on sustainable basis in high Himalayan mountain ecosystem (Ashish 1983). These changes in traditional resource utilization structure are not only leading to rapid environmental changes and disruption of ecosystem services but also contribute to the climate change through the deforestation and degradation of forests in Himalayas (Tiwari and Joshi 2012a, b).

Impact of Environmental Changes on Ecosystem Services

Ecosystems are natural assets that provide a wide range of services and products which sustain humanity across the planet (Millennium Ecosystem Assessment 2005). The mountains support a variety of ecosystems that provide key resources and services for human sustenance (Beniston 2005). For example the mountain communities have contributed significantly to the conservation and protection of these ecosystem goods and services with their indigenous knowledge and traditional resource management practices. The goods and services provided by mountain ecosystems can be divided into the following three primary categories (Hassan et al. 2005; UNEP-WCMC 2002): (I) *Supporting Services* which maintain the essential natural conditions for all forms of life and include soil formation, photosynthesis and nutrient cycling; (II) *Provisioning Services* that provide means of livelihoods and the economy by supplying various natural resources and products, such as food, water, timber, and fibre. Undoubtedly, the most important good provided by mountain ecosystem is water and, therefore, the mountains are often known as 'water towers' for the world (ICIMOD 2011). Nearly 85% of global freshwater comes from the mountains (Viviroli et al. 2003; Nellemann et al. 2011); (III) *Regulating Services* contribute to the control of climate, flood and disease, while maintaining water quality and recycling wastes; and (IV) *Cultural Services* provide opportunities for recreation, education and spiritual and aesthetic inspiration (World Resource Institute 2005).

The results of land use change detection exercise in GIS environment have revealed that cultivated land was extended from 24.29 km^2 in 2001 to 27.27 km^2 in 2011. This extension of cultivated land has been obtained mainly through penetration of agriculture into the forests. This increase in the cultivated land area has been through the extension of cultivation in the forests (3.34 km^2) and wastelands (0.20 km^2). The land use changes led to a reduction in the forest areas from 80.51 km^2 in 2001 to 75.70 km^2 in 2011, making the total decrease of 4.81 km^2, or 5.97%, during the period of 10 years. The decrease in forest area was mainly due to the transformation of 3.34 km^2 forest-land into agricultural area and turning of 1.47 km^2 of forests into degraded land and wastelands during that period. The degraded land and wasteland within the catchment increased from 2.32 km^2 or 2.14% in 2001 to 2.35 km^2 of the total watershed area in 2011. This increase in wasteland area has been caused by the conversion of a proportion of forests (1.47 km^2) into a degraded land. The water-bodies in the headwater recorded a decline of 0.05% due to a decreased water level of streams and an increased area of dry stream-bed.

The rapid changes in land use and a decline in forest area have disrupted the hydrological regime of Himalayan watershed. Furthermore, during the last 30 years the pattern of Indian monsoon has changed over the Himalayan Mountains resulting in reduction of rainfall and annual rainy days, and an increase in the incidences of erratic rainfall and geo-hydrological disasters in the region (ICIMOD 2010). Studies indicate that the surface run-off from cultivated (80%) and a barren land (85%) is much higher compared to that

from the forests (25%) (Tiwari 2000). These hydrological disruptions are now clearly discernible in (I) long-term decreasing stream-flow (Tiwari and Joshi 2012a), (II) diminishing discharge and drying of springs (Tiwari and Joshi 2012a), and (III) biotic impact on surface run-off flow system and channel network capacity (Rawat 2009, Tiwari and Joshi 2012a; Tiwari 2000). Table 1 shows that more than 33% of natural springs have completely dried, nearly 11% of springs have become seasonal, while the stream-length of 736 km has dried during the last 30 years mainly due to deforestation and the resultant decreased recharge of groundwater in the region. Table 3 shows that as many as 61% villages have been facing great scarcity of water for all purposes where the situation turns into severe water crisis during dry months (Tiwari and Joshi 2012a).

Table 1. Changes in the Status of Water Resources in Upper Kosi Catchment

Micro-watersheds	Villages facing water scarcity (%)	Decrease in biomass supply to agriculture (%)	Irrigation potential reduced (%)	Agricultural productivity declined (%)
North Kosi	67	35	14	25
East Kosi	51	29	17	33
West Kosi	69	41	21	19
South Kosi	57	58	19	24
Total	61	41	18	25

Source: Field surveys 2011.

The study revealed that availability of water, fuel-wood and fodder decreased while the irrigation potential and agricultural production declined. The depletion of forests and the resultant hydrological disruptions caused 29% (East Kosi) to 58% (South Kosi) decline in supply of biomass to agro-ecosystem and loss of 14% (East Kosi) to 21% (South Kosi) of irrigation potential (in terms of irrigated area) in different micro-watersheds of Upper Kosi Catchment during last 30 years (Table 2). The loss of primary ecosystem services, particularly, water and biomass has direct adverse impact on the productivity of subsistence agricultural system. The different micro-watersheds of Upper Kosi catchment lost their agricultural productivity ranging from 19% in West Kosi to 25% in North Kosi with an overall decline of 25% (Table 2).

Table 2. Changes in Water Availability, Biomass Supply and Irrigation Potential

Micro-watersheds	Total area (km^2)	Springs dried (%)	Springs become seasonal (%)	Stream-length dried (m)
North Kosi	44.23	41	17	311
East Kosi	29.18	36	11	227
West Kosi	23.37	47	21	114
South Kosi	11.16	11	05	84
Total	107.94	33.75	10.80	736

Source: Field surveys 2011.

Impact on Food and Livelihood security

The region has been facing deficit situations in food, fodder and fuel-wood for long period mainly due to constraints of subsistence economy and population growth. However, the loss of ecosystem services has further increased the resource deficit levels. The region recorded respectively 23–39%, 13–25% and 15–37% deficit of food, fodder and fuel-wood within the different micro-watersheds of the region between 1981 and 2010 (Table 3). A huge proportion of rural population, particularly landless marginalized and poor inhabitants, largely depends on agricultural labour, village based processing of agricultural and livestock products, making agricultural tools and traditional handcraft items and collecting medicinal plants for their livelihood. But due to the depletion of the forests and biodiversity the livelihood based on the forest and medicinal plant collection activities has decreased from 37% to 40% and from 20% to 29%, respectively, in different micro-watersheds. Similarly, livelihood opportunities in agriculture, livestock and handicraft sectors have also declined between 19% and 29%, 9% and 22%, and 22% and 40%, respectively, in different micro-watersheds of Upper Kosi Catchment during last 30 years due to a reduced agricultural and livestock productivity (Table 4).

Table 3. Changes in Food, Fodder and Fuel-wood Deficit Situations in Upper Kosi Catchment

Micro-watersheds	Food deficit (%)	Fodder deficit (%)	Fuel-wood deficit (%)
North Kosi	38	19	37
East Kosi	27	13	15
West Kosi	39	25	31
South Kosi	23	24	26
Total	32	20	27

Source: Field surveys 2011.

Table 4. Impact of Land Use Dynamics on Rural Livelihood in Upper Kosi Catchment

Micro-watersheds	Decline in forest based activities (%)	Decline in agro--based activities (%)	Decline in medicinal plant collection activities (%)	Decline in livestock production activities (%)	Decline in traditional handicraft & agricultural tool making activities (%)
North Kosi	40	24	29	14	26
East Kosi	34	29	22	15	24
West Kosi	39	19	23	22	22
South Kosi	37	24	20	09	40
Total	38	24	24	15	28

Source: Field surveys 2011.

Trends of Rural Out-migration

During the last 30 years the region has experienced high population growth. The subsistence agricultural economy with high cropping intensity and low productivity has not been able to absorb the increasing population. Consequently, a tendency of out-migration, particularly among the male youths, in search of livelihood and employment has

been prevailing in the region for a long period of time. The migration is both temporary as well as of permanent nature and includes educated as well as uneducated migrants. However, the depletion of natural resource base, climate change and the resultant loss of ecosystem services; and increasing constraints of livelihood opportunities and food production have accelerated the process of outmigration in the region. Table 5 shows that 21,496 persons have migrated from the region during 2001 and 2010 of which 81.48% and 18.52%, respectively, were educated and uneducated migrants. Out of the total migrants (21496 persons) during the period 27.79% migrated permanently whereas as much as 72.21% migrated on temporary basis (Table 5). The study observed that the trend of outmigration has shown consistently increasing trends during the recent years as the proportion of rural outmigration increased by more than 2966% during 2001 and 2010 (Table 6).

Table 5. Pattern of Rural Outmigration during 2001–2010

Micro-watersheds	Total Migrants	Permanent Migrants	Temporary Migrants	Educated Migrants	Uneducated Migrants
North Kosi	4076	37.00	63.00	75.21	24.79
East Kosi	4560	21.55	78.45	81.55	18.45
West Kosi	5230	37.11	62.89	77.59	22.41
South Kosi	7630	15.51	84.49	91.57	08.43
Total	21496	27.79	72.21	81.48	18.52

Source: Field surveys 2011.

Table 6. Trends of Rural Outmigration during 2001–2010

Years	Total Migrants	Change (%)
2001	701	--
2002	795	13.41
2003	1007	26.67
2004	1295	28.60
2005	1491	15.13
2006	1521	02.01
2007	1609	05.78
2008	2975	84.90
2009	4591	54.32
2010	5511	20.04
Total	21496	2966.48

Source: Field surveys 2011.

Impact on Rural Women

The depletion of land, water and forest resources has increased the distances to be covered for the collection of primary village resources in the catchment during 2001–2011 (Table 7). The average travel distance involved in the collection of fodder and fuel-wood and fetching water have increased from 0.5 km to 1.5 km in different micro-watersheds of

the catchment during the period. However, the average travel distance for the collection of fuel-wood has increased from 3 km in 2001 to 3.75 km in 2011 reflecting the acute pressure on forest resources in the catchment (Table 7). As a result the workload of agricultural and livestock sectors on women has increased (30%) and the time available for women for personal and child care has reduced (25%) during 2001–2011. The depletion of water resources has not only stressed the water supply system but also reduced the productivity of traditional agricultural system undermining the community health through a decreasing availability of water for domestic purposes and reducing the quantity as well as quality of food (Tiwari and Joshi 2012b). It was found that 37% women are not able to take bath on a daily basis due to a reduced availability of water, and out of the remaining 63% women more than 50% normally take bath at the water sources and pollute the water resources. The scarcity of potable drinking water is compelling women to fetch water from long distances without taking into account water-quality; in consequence a considerably large proportion of rural population is consuming unsafe drinking water and is affected by several kinds of water-borne diseases. Furthermore, the increased travel distances to collect water have adversely affected the health of women due to an increased workload, less time available for taking care of their hygiene and sanitation on the one hand, while on the other they are not able to take proper health care of their young children and elderly members of family due to lack of time.

It was observed that the reduced availability of water and the resulting poor access to water needed for drinking, sanitation and various other domestic purposes is rendering the population, more particularly the women of the region, highly vulnerable to a variety of water related diseases and health disorders. It was found that a large proportion of women of the catchment are not able to take proper care of their drinking water, sanitation and personal hygiene which is affecting their health conditions. The study revealed that a large proportion of population of all age groups, particularly children and women, are affected by several kinds of water-borne diseases in the region. It was observed that as much as 40% female population in all age-categories is under severe threat of a variety of health risks generated mainly due unsafe drinking water, unhygienic conditions and lack of sanitation in homes and environs (Table 8). Nearly 69% of the total population was affected by jaundice, diarrhoea, typhoid, skin infections, dysentery, worm infections, cholera and various other kinds of water borne diseases (Table 8). The percentage of male and female population affected by water-borne diseases ranges between 19% and 38% and 31% and 55%, respectively, in the region (Table 8). In general, women, children below the age of 15 years and the elderly above 55 years have been found to be the most affected by unhygienic conditions and lack of sanitation in the region (Table 8). The girls below the age of 15 suffer the most of water borne health hazards because of less attention to and care of their health due to prevailing gender discrimination in the society.

Furthermore, the decline in food productivity, the recent surge in food prices and a decreased food purchasing power due to economic recession have complicated the health conditions in the region by creating the deficiency of food for a large proportion of population consisting of mainly poor and women households (Tiwari and Joshi 2012b). This has contributed to a reduced supply of vital nutrients to rural population, particularly for the women and children, most of whom are already suffering from malnutrition and nutrients deficiency, affecting the overall community health in the region. Table 9 makes it clear that on an average more than 50% of the population, including male and female of all age-gro-

ups, are in the grip of food and nutrition deficiency. The children and aged people of both the sexes are the most affected by food deficiency and malnutrition disorders. However, women of all age-groups have been found much more vulnerable to food deficiency and malnutrition health risk compared to male population in the catchment (Table 9).

Table 7. Distances involved in the Collection of Resources during 2001–2011

Micro-watersheds	Average Travel Distances Involved in Resource Collection (km)					
	Fodder		Fuel-wood		Water	
	2001	2011	2001	2011	2001	2011
North Kosi	2.5	3.5	2.5	3.5	0.5	1.5
East Kosi	2.5	3.0	2.5	3.0	0.5	2.0
West Kosi	3.0	4.0	3.0	4.0	1.0	1.5
South Kosi	3.0	4.5	4.0	4.5	0.5	1.5
Total	2.75	3.75	3.0	3.75	0.6	1.6

Source: Field surveys 2011.

Table 8. Population affected by Different Water Borne Diseases and Sanitation and Hygiene Related Health Problems in 2011

Age Category	% of Population affected by Jaundice, Diarrhoea, Typhoid, Skin Infection, Dysentery, Worm Infection, cholera (One and More Diseases) during 2009 2010		
	Male	Female	Total
Below 5 Years	19	55	74
6–15 Years	28	31	59
16–40 Years	25	44	69
41–55 Years	35	37	72
Above 55 Years	38	35	73
Total	29	40	69

Source: Field surveys 2011.

Table 9. Population affected by Food and Nutrition Deficiency during 2001–2011

Age Category	Percentage of Population affected by Food and Nutrition Deficiency in 2011		
	Male	Female	Total
Below 5 Years	27	36	63
6–15 Years	21	25	46
16–40 Years	11	17	28
41–55 Years	17	29	46
Above 55 Years	38	41	79
Total	23	30	52

Source: Field surveys 2011.

The Himalayas is highly vulnerable to a variety of natural hazards and disasters, such as landslides, cloud bursts, flash floods, avalanches, earthquakes, and forest fires. The process of environmental change and the resultant land use intensifications and hydrolo-

gical disruptions have increased the susceptibility of these fragile mountains to augmented risks of natural hazards and disasters. Moreover, climate change has contributed to an increased severity, frequency and intensity of extreme weather events, particularly the frequency of high intensity rainfall that can have serious consequences far beyond their mountain sources. An increasing vulnerability to the multiple risks of natural disasters has intensified the trends of rural out-migration in the region (Sherpa 2007). Lessons learned from natural disasters in the Himalayas over the past 20 years illustrate how physiological vulnerabilities, socio-cultural and economic marginalization and gender stereotypes make the differential level of impacts on mountain communities. As a result, the nature and magnitude of the impacts of natural disasters on men and women are totally different during as well as after the disaster (Mehta 2007). The women constitute the highest proportion of population affected by natural disasters primarily due to lack of preparedness and information. The out-migration of male during the post disaster phase, often forces women to shoulder the productive, reproductive and community responsibilities while still suffering from the agony caused by the disaster. Table 10 shows that the number of households affected by extreme weather events and associated natural disasters generally increased, with a few exceptions, during 2001 and 2011 in the catchment. Over the period of 10 years (2001–2011), 60% households on the average were affected by extreme weather events. But it is alarming to observe that the proportion of woman-headed households exceeds 60% of the total families affected, except in 2010 and 2011, even-though the proportion of woman-headed households is only 27% (out of total 2197 households) in the catchment. It is also disappointing to note that number of women affected by extreme weather events was growing during the period of 10 years (2001–2011) in the region.

Table 10. Impacts of Extreme Weather Events during 2001–2011

Years	Impacts of Extreme Weather Events During 2001–2011			
	Total Households Affected	Women Headed Households Affected	Percentage of Women-Headed Households Affected	Total Number of Women Affected
2001	247	151	61.13	751
2002	511	345	67.50	1537
2003	531	367	69.11	1527
2004	545	239	43.85	1041
2005	417	265	63.54	1117
2006	677	435	64.25	2137
2007	525	347	60.38	1635
2008	735	469	63.81	2515
2009	755	537	71.13	2738
2010	971	477	49.12	2709
2011	955	475	49.74	2612
Total	624	374	60	1847

Source: District Administration Records 2001–2011.

Conclusion

In Himalaya, due to the vulnerability of rural communities to water, food, livelihood and health insecurities, but have also increased the susceptibility of mountain communities to multiple risks of natural disasters. These changes have stressed the local production system and increased the trends of out-migration of rural male youths in the region. This has further deteriorated the socio-cultural life of women by increasing their hardships, drudgeries and marginalization in the mountains. As a result the workload of agricultural and livestock sectors on women has increased considerably reducing drastically the time available with them for their personal and child care. The reduced availability of water for food production and decreased access to water for drinking and sanitation are particularly increasing the vulnerability of women to a variety of water-borne and food and nutrition deficiency health risks. Furthermore, the women constitute the highest proportion of population affected by natural disasters primarily due to lack of preparedness and information and more exposure.

Hence, more research is needed to establish best possible strategies for sustainable development in the future, particularly in emerging sectors of rural livelihood in the Himalayas, such as forest conservation, village-based eco-tourism, dairying and horticulture and value chain development. Since the traditional adaptation mechanism and knowledge developed by rural women would play crucial role in ecological restoration and sustainable development of natural resources in view of climate change, gender mainstreaming should form one of the core important components of overall climate change adaptation strategy and sustainable development framework in entire the Himalayas. This underlines the need of empowering rural women in the natural resources for which their educational, social, economic and political empowerment would be inevitable. Moreover, a gender sensitive mountain development agenda and gender inclusive policies would be imperative for attaining the environmental, economic as well as social sustainability in the Himalayas.

References

Aase H. A., Chapagain P., Tiwari P. C., 2013, *Innovation as an Expression of Adaptive Capacity to Change in Himalayan Farming*, Mountain Research and Development, Feb. 2013, 33 (1), pp. 4–10, http://dx.doi.org/10.1659/MRD-Journal-D-12-00025.1.

Ashish M., 1983, *Agricultural Economy of Kumaon Hills: A threat to Ecological Disaster*, [in:] Singh O. P. (ed.), *The Himalayas: Nature, Man and Culture*, New Delhi, Rajesh Publications, pp. 233–245.

Batliwala S., 2007, *Putting Power back into Empowerment*, http://www.whenet.org/docs/perspective-srilatha-0707.html

Beniston M., 2005, *Mountain climates and climatic change: An overview of processes focusing on the European Alps*, Pure and Applied Geophysics, 162, pp. 1587–1606.

Brody A., Demtriades J., Esplen E., 2008, *Gender and Climate Change: Mapping the Linkages – A Scoping Study on Knowledge and Gaps*, BRIDGE, University of Sussex, Sussex.

CIDA, 2002, *Gender Equality and Climate Change: Why consider gender equality when taking action on climate change?* Canadian International Development Agency (CIDA), Hull.

Daley E., 2011, *Gendered Impacts of Commercial Pressures on Land*, Mokoro, London.

FAO, 2008, *Food Security in Mountains – High time for action*, Brochure of the International Mountain Day 2008, http://www.mountaineering.ie/documentbank/uploads/IMD08%20brochure.pdf

FAO, 2010, *Farmers in a changing climate: does gender matter?*, Food and Agricultural Organisation (FAO), Rome, http://www.fao.org/docrep/013/i1721e/i1721e00.htm

FAO, 2011, *The State of Food and Agriculture – Women in Agriculture: Closing the Gender Gap in Development*, Food and Agricultural Organisation (FAO), Rome.

Hassan R., Scholes R., Ash N. (eds.), 2005, *Ecosystems and human well-being: Current state and trends*, vol. 1, *Findings of the condition and trends*, Working Group of the Millennium Ecosystem Assessment, Washington, Island Press.

Hoermann B., Kollmair M., 2009, *Labour migration and remittances in the Hindu Kush-Himalayan region*, ICIMOD Working Paper, International Centre for Integrated Mountain Development, Kathmandu, Nepal.

Huddleston B., Ataman E., 2003, *Towards a GIS-based analysis of mountain environments and populations*, Environment and Natural Resources Working Paper, 10, Food and Agriculture Organization of the United Nations, Rome.

ICIMOD, 1999, *Searching for Women's Voices in the Hindu Kush Himalayas*, ICIMOD, Kathmandu, Nepal.

ICIMOD, 2010, *Gender Perspectives in Mountain Development: New challenges and innovative approaches periodical publication on Sustainable Mountain Development*, International Centre for Integrated Mountain Development (ICIMOD), 57, Kathmandu, Nepal.

ICIMOD, 2011, *Labour Migration and Remittances in Uttarakhand, Case Study Report*, ICIMOD, Kathmandu, Nepal.

IOM, 2008, *Migration and climate change*, IOM Migration and Research Series, 31, International Organisation for Migration, Geneva.

IFAD, 2001, *Rural Poverty: The Challenge of Ending Rural Poverty Report*, Oxford University Press.

IPCC, 2007, *Climate change 2007: Impacts, adaptation and vulnerability*, Working Group II contribution to the Intergovernmental Panel on Climate Change Fourth Assessment Report, Cambridge University Press, Cambridge.

Jain A., Nagarwalla D. J., 2004, *Why conserve forests? A baseline study to assess people's perceptions, attitudes and practices for increasing people's involvement in conservation*, Dehradun, Appropriate Technology India.

Joshi B., Tiwari P. C., 2013, *Women and Sustainable Mountain Development: An illustration of Indigenous Women's Adaptation to Climate Change in Himalayas*, paper presented at Sixteenth Sustainable Development Conference - Creating Momentum: Today is Tomorrow, Sustainable Development Policy Institute, Islamabad Pakistan, 10–12 December 2013.

Kollmair M., Manandhar S., Subedi B., Thieme S., 2006, *New figures for old stories: Migration and remittance in Nepal*, www.migrationletters.com

Lonergan S., 1998, *The role of environmental degradation in population displacement*, Environmental Change and Security Project Report, 4, pp. 5–15.

Leduc B., Shrestha A., 2008, *Gender and Climate Change in the Hindu Kush-Himalayas: Nepal Case Study*, International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal.

Mamgain R. P., 2003, *Out-migration among rural households in Uttaranchal: Magnitude and characteristics*, Labour and Development (special issue on migration), 9 (2), pp. 259–287.

Maithani B. P., 1996, *Towards Sustainable Hill Area Development*, Himalayas: Man, Nature and Culture, 16 (2), pp. 4–7.

Malhotra A., Schuler S. R., 2005, *Women's Empowerment as a Variable in International Development in Measuring Empowerment: Cross-Disciplinary Perspectives by Deepa Narayan-Parker*, Deepa Narayan, World Bank Publications.

Mehta M., ICIMOD, 2007, *Gender and Disasters, Draft Report*, International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal.

Messerli B., Ives J. D. (eds) 1997, *Mountains of the world – A global priority*, A contribution to Chapter 13 of Agenda 21, Parthenon, New York.

Millennium Ecosystem Assessment, 2005, *Ecosystems and Human Well-being: Synthesis*, Island Press, Washington, DC.

Nautiyal A., 2003, *Women and Development in the Garhwal Himalayas*, AJWS, 9, 4, pp. 93–113.

Nellemann C., Verma R., Hislop L. (eds.), 2011, *Women at the frontline of climate change: Gender risks and hopes*, A Rapid Response Assessment. United Nations Environment Programme, GRID-Arendal.

Pant B. R., 2000, *Uttarakhand: A Geographical Introduction*, Sharad Nanda, Kumaon Sharadotsav Samiti, Nainital, pp. 9–16.

Rasmussen S. F., Parvez S., 2002, *Sustaining Mountain Economies: Sustainable Livelihoods and Poverty Alleviation*, Thematic Paper for Bishkek Global Mountain Summit, UNEP (draft).

Rawat J. S., 2009, *Saving Himalayan Rivers: developing spring sanctuaries in headwater regions* [in:] Shah B. L. (ed.), *Natural resource conservation in Uttarakhand*, Ankit Prakshan, Haldwani, pp. 41–69.

Sonesson M., Messerli B. (eds.), 2002, T*he Abisko Agenda: Research for mountain area development*, Ambio Special Report, 11, Royal Swedish Academy of Sciences, Stockholm.

Sherpa D., 2007, *New Vulnerabilities for Mountain Women: A Different Light on the Greater Himalayas*, Final Draft Report, International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal.

Singh J. S., Pandey U., Tiwari A. K., 1984, *Man and Forests: A Central Himalayan Case Study*, Ambio, 13, pp. 80–87.

Stromquist N., 2002, *Educating as a means for empowering women*, [in:] Parpart J. L. Rai Shirin M., Staudt K. (eds.), *Rethinking Empowerment*, Routledge, London.

Tiwari P. C., 2000, *Land Use Changes in Himalayas and their Impact on the Plains Ecosystem: Need for Sustainable Land Use*, Land Use Policy, 17, pp. 101–111.

Tiwari P. C., Joshi B., 2012a, *Environmental changes and sustainable development of water resources in the Himalayan headwaters of India*, International Journal of Water Resource Management, 26 (4), pp. 883–907, DOI 10.1007/ s11269-011-9825-y.

Tiwari P. C., Joshi B., 2012b, *Natural and socio-economic factors affecting food security in the Himalayas*, Food Security, 4 (2), pp. 195–207, DOI 10.1007/s12571-012-0178-z.

UN, 2012, *Outcome of the Conference*, Agenda Item – 10. Rio+20: United Nations Conference on Sustainable Development, June 2012, Rio de Janeiro, Brazil.

UNEP, 2004, *The fall of water. United Nations Environment Programme*, GRID-Arendal, http://www.grida.no/publications/fall-ofthe-water/

UNEP-WCMC, 2002, *Mountain Watch: Environmental change and sustainable development in mountains*, UNEP, Nairobi, www.unep-wcmc.org/mountains/mountainwatchreport/ (accessed 11 March 2012)

UNDP, 2010, *Power, Voice and Rights: A Turning Point for Gender Equality in Asia and the Pacific*, *Asia Pacific Human Development Report*, Colombo, United Nations Development Programme (UNDP) Regional Centre for Asia Pacific.

Verma R., 2001, *Gender, Land and Livelihoods: Through Farmers Eyes*, International Development Research Centre (IDRC), Ottawa.

Viviroli D., Weingartner R., Messerli B., 2003, *Assessing the Hydrological Significance of the World's Mountains*, Mountain Research and Development, 23, pp. 32–40.

World Bank, 2009, *India receives world's largest remittance flows*, Washington DC, World Bank, http://worldbank.org/E6Y6IE0CQ0 (accessed 14 November 2012)

World Resources Institute, 2005, *Millennium Ecosystem Assessment – Ecosystems and Human Well--being: Synthesis*, Island Press, Washington, DC.

STUDIA OBSZARÓW WIEJSKICH
2015, volume 38, pp. 97–110
http://dx.doi.org/10.7163/SOW.38.6

KOMISJA OBSZARÓW WIEJSKICH
POLSKIE TOWARZYSTWO GEOGRAFICZNE
www.ptg.pan.pl

INSTYTUT GEOGRAFII I PRZESTRZENNEGO ZAGOSPODAROWANIA
POLSKA AKADEMIA NAUK
www.igipz.pan.pl

RENEWABLE ENERGY FOR THE RURAL AREAS: SELF-SUFFICIENCY OR A NEW ECONOMIC BRANCH?

Antonín VAISHAR • Milada ŠŤASTNÁ • Kateřina STONAWSKÁ • Jana ŽITŇÁKOVÁ

Mendel University in Brno
Zemědělská 1, 61300 Brno, Czechia
antonin.vaishar@mendelu.cz • stastna@mendelu.cz • katerina.stonawska@mendelu.cz • jana.zitnakova@mendelu.cz

Abstract: The paper is discussing the role of energy production from renewable sources in the rural areas of Central Europe, the South-Moravian Region (Czechia) being the case study area. Based on this example the problems with the use of water, wind, sun, geothermal and biological sources for the energy production are illustrated. The environmental, technological, economic and social aspects of the matter are discussed. It was concluded that the use of renewable sources for decentralised energy production and consumption is strongly recommended for the rural areas. Concerning the mass production, the use of the biological sources seems to be meaningful. In the case of other sources, rural communes should be careful taking into account an environmental and economic impact and also the acceptance of local inhabitants.

Key-words: renewable energy sources, rural areas, mass production, decentralisation, South-Moravian Region.

Introduction

Energy production from the renewable sources belongs to topical economic trends. Recoverability and, thus, sustainability is the main argument. The necessity to reduce pollution from fossil fuels and fear of nuclear power plants is usually the second one. In the reality, this method of the energy production began in 1970s as a response to the oil Crisis. The production of energy from renewable sources is space-inefficient. It requires a relative large space which is available usually in the rural areas. On the other hand, renewable sources could be an optimum solution in spacious rural areas in the developing countries which are not yet connected to the medium voltage networks. Decrease of energy dependency on central distribution could be also an argument – especially in the future. Our society is highly dependent on electric power. It could collapse in a few hours after the power supply interruption. All these arguments support the idea of the energy production from renewable sources in terms of a prospective rural economic branch (Šťastná et al. 2012).

However, the production of the electric power from renewable sources is controversial for several reasons. First of all, there is a basic contradiction between short-time economic interests of producers, distributors and consumers of energy (which are in con-

cordance with the neo-liberal ideology) and long-term public interests (as sustainability of the production, landscape aesthetic, nature protection, keeping the employment in the rural areas etc.). Also public interests are often inconsistent: is landscape protection more important than the employment, is sustainability of the energetic policy more important than protection of animals? The approach "not in my backyard" (van der Horst 2007; Frantál 2008) welcoming the production of energy from renewable sources provided that it is produced in another location is also frequent.

Dispersion and difficult prediction of such a production belong to its main complications. Diametrical structural differences among individual types of renewable energy sources add to it. That is why it is almost impossible to apply unified solutions for large territories but it is necessary to look for trajectories how to evaluate specific potential of each region and how to use it for streamlined implementation. The South-Moravian Region is our case study area in this regard.

Theory, methodology, data

According to the Czech definition, "*Renewable sources consist of non-fossil natural energetic sources, namely energy of the wind, energy of solar radiation, geothermal energy, energy of water, soil, air, biomass, landfill gas, sewer gas and bio-gas*" (Law No. 180/2005 Coll.). In general, biomass, solar, water, wind and geothermal energy are among those which may currently be used.

The rural area is a place where a large part of the renewable energy sources (RESs) can originate. First of all, this concerns bio-energetic resources. Their production is a part of the agriculture and forestry. Some authors even see the future or the revival of the rural areas in such a production (see e.g. Knappe 2009). But also big solar or wind parks which require a lot of space are situated in the rural landscape as a rule. Rapid development of RESs changes rural landscape to a wide extent (Vaishar et al. 2011). Yellow fields of the rape cultivated for the energetic use remain to be typical for the Moravian agricultural land. Wind turbines are landscape marks in some territories. Large solar fields situated often on the agricultural soil of the highest quality are integral part of the South-Moravian rural areas. The latter type of RESs evokes the question of the food security (e.g. Nonhebel 2005).

However, the rural areas are also an important consumer of electric power. RESs (especially solar, wind or geothermal sources) are suitable also for covering the energy demand of individual buildings or grounds. Rural residences, production grounds or service equipment fit it. In this way, distribution network losses and dependency on them could be eliminated. Hain et al. (2005) shows that production of energy from RESs at the local level could at least significantly improve the energetic balance of the country.

Energy production from RESs has also its externalities. Bergmann et al. (2006) specify impacts on the landscape, nature and air quality. They also take the employment and energy prices into account. Elliott (2000) shows how problematic it is to use the RESs as a part of the sustainable development in the conditions of obsolete institutional, market and industrial relations. Neo-liberal economy with its only criterion of short-term individual profit is in direct contradiction with the principles of sustainability which are based on three pillars – economic, social and environmental.

The problematic nature of RESs consists in their recoverability. Conventional fossil resources were formed for millions of years and they are fully available now. It depends on mankind only how much and when humans draw them. On the other hand, RESs are available at any time according to the specific situation and people depend on their instantaneous quantity. This represents a basic problem, since no efficient method of energy storage exists so far.

The development of the energy production from RESs meets a number of barriers which have been described, e.g. by Painuly (2001). He divided these barriers into economic, technological, market, institutional, social and environmental ones, and defined the criteria for the selection of an appropriate source as follows: (1) availability of the relevant sources (natural condition), (2) availability of appropriate technologies, (3) commercial and financial sustainability, (4) environmental damage and benefits, (5) socio-economic effects, including job creation.

Social acceptance is one of the crucial questions connected with the development of the energy production from RESs (Wüstenhagen et al. 2007). Lack of wide acceptance of this method of energy production among the population affected may become a major barrier. The acceptance of RESs is naturally connected with its perception which has environmental, economic and psychological aspects. It is known that disproportion between a general agreement for RES and resistance to specific projects exists. However, as shown by Rogers et al. (2008), the local projects are accepted substantially more favourably than big ones aimed at delivery of the energy into the network against financial profit. On the other hand, a support for local projects from central sources is expected.

It is also necessary to take into the account that the public does not represent any homogeneous group in relation to the RESs but it consists of different interest and world view groups. Their attitude toward the problem can be quite different (West et al. 2010). Serdianou and Genoudi (2013) show that this type of energy is preferred by educated medium aged people with higher incomes. Actually, it is necessary to identify such groups in the affected area and to choose streamlined information tactics. Zoellner et al. (2008) show that two aspects are important to increase the public awareness: economic advantage and public involvement in the decision-making process.

The access to innovations in the rural areas could be one of the positive impacts of RESs utilization. Carpenter et al. (2013) stated that (often criticized) support to the wind energy in Germany became the impetus for an inclusion of marginal niches to the mainstream.

The study is aimed at the evidence of the RESs utilization in the case study area (the South-Moravian Region). Problems of the power production from renewable sources are discussed in terms of self-sufficiency of the rural areas on the one hand and in terms of an economic branch bringing new jobs and economic benefit to the rural areas on the other.

The empirical part of the study is based on an analysis of energy production from renewable sources in the South-Moravian Region in general and according to individual types. Official data were provided mainly by Energostat, Energy Regulatory Authority (ERÚ), Czech Energy Company (ČEZ) and Czech Statistical Office (ČSÚ). Individual RESs are evaluated and discussed from the viewpoint of their availability, efficiency and externalities related to the rural development.

There were also other methods used: field research analysing individual types of RESs in detail, SWOT analysis (using a brainstorm of experts of five institutions dealing with rural problems) and also a questionnaire aimed at the perception of RESs. The investigations mentioned are not a direct subject of this paper.

Energy production from renewable sources

About 20% of energy (mostly obtained from biomass and water) is produced from RESs worldwide. Figure 1 shows the development of energy production from RESs in the EU countries. Because the hydropower belongs to the most traditional RESs, countries with the best conditions to produce this type of energy are in the lead. It also shows that the present level of the energy production from RESs is relatively modest in Czechia.

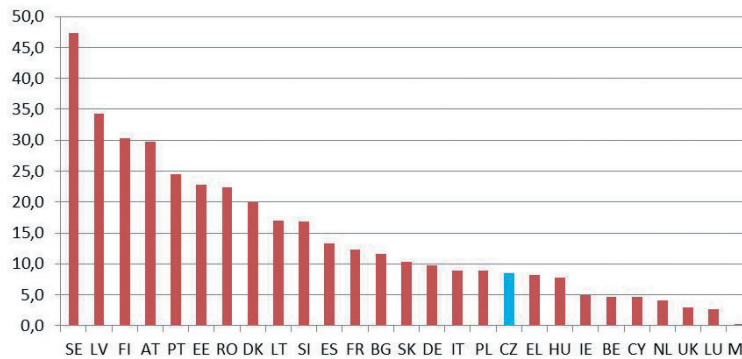


Fig. 1. Share of RESs in the energy production in the EU countries 2009 [%]
Source: EU (2013).

Table 1 shows the share of RESs in the total energy balance of Czechia. The national energy sources are based on coal and nuclear fuels in more than 90%, whereas oil and natural gas are mostly imported. This energetic base is not very favourable. Except for the nuclear energy, it represents a combination of environmentally unfriendly and imported sources and, therefore, energetic dependency. The problem is also aggravated by the fact that the installed capacity of the nuclear power plants is used in 75% during the year, coal power plants in 55% whereas power plants using RESs in 10–20% only. Thus, their efficiency is extremely low.

Table 1. Energy resources in Czechia in 2009

Source	Own sources [%]	Including export and import [%]
Coal and coal-gas	66,9	41,8
Nuclear	22,7	16,9
Combustible bio-sources and wastes	8,1	5,6
Oil and oil-products	0,9	21,7
Water sources	0,7	0,5
Natural gas	0,5	16,0
Solar, wind, geothermal	0,1	0,1

Source: Aggregated Energetic Balance, Czech Statistical Office, Praha.

Figure 2 shows the recent development. The year 2010 recorded a peak in the area of construction of the solar power plants. This was caused by a massive non-system support of the solar energy production. The cause spoiled the perception of RESs among people due to substantial damage to the landscape, occupation of agricultural soils, and especially due to an increase in energy prices. Nevertheless, the energy production from RESs slowly increases. The most recent data show that 8,055 GWh of energy from RESs (2012) have been produced, which corresponds to 11.43%.

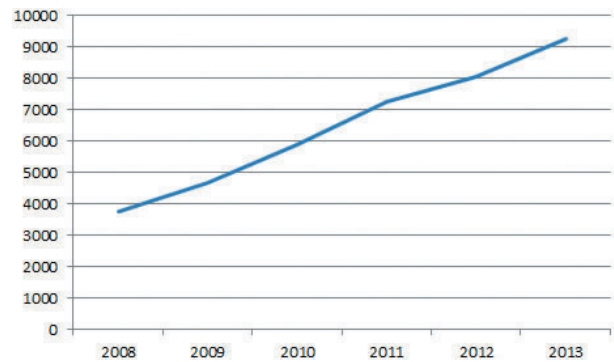


Fig. 2. Development of the energy production from RESs in 2008–2013
Source: ERÚ (2014).

The Figure 3 shows shares of individual sources. Water was the main source of energy production among RESs recently. It is a traditional source used since medieval ages, but its capacities are almost exhausted. The biomass is more promising, especially in terms of substitution of traditional crops with energetic plants. As it was said, the solar energy has recorded important increase in 2010. These three sources are currently balanced. The other three sources play a complementary role, although there are prospects for the energy obtained from wastes.

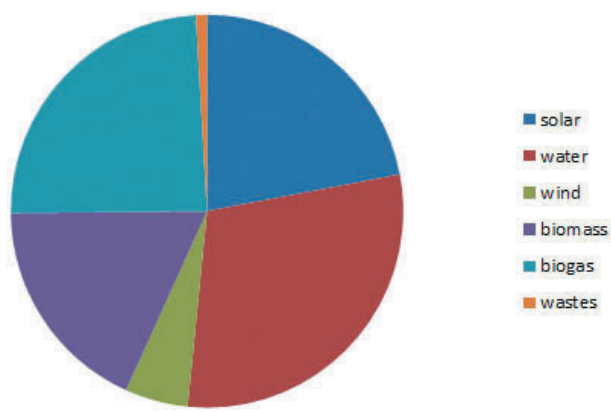


Fig. 3. Shares of individual sources on the total energy production from RESs.
Source: ERÚ (2014).

Czech Energetic Policy presupposes a decrease of fossil fuel use which should be realized by transition to nuclear energy and RESs. The share of RESs should reach 13 % in 2020 which is fully realistic. Biomass should play the main role among RESs (the production should be limited to assure the food security of the country). This policy is challenged by many: neo-liberals (who prefer leaving all economic policies to the market powers), opponents of the nuclear energy (but Czech population has provisionally a positive attitude towards the nuclear energy), various groups interested in specific types of energy etc.

The use of coal for the energy and heat production in the South-Moravian Region is minimal. There are no current environmental problems connected with the energy production (except for vehicle fuel). On the other hand, the heat economy depends to a large extent on the mostly imported natural gas, which makes region dependent on foreign energy sources. This is why the search for better utilization of RESs has its sense also in this respect.

Natural conditions of the region play an important role. The water reservoirs of Vranov, Nové Mlýny and Brno-Kníničky constitute relatively large sources of water energy. They have affected the original landscape a lot – including the destruction of some rural settlements. Today, all three reservoirs are the main tourist and leisure destinations in the region. These power plants are supplemented by about sixty small water power plants. Actually, the accessible water sources have been used almost completely.

On the other hand, among all Czech regions this one has the best conditions for the use of solar energy. Situated in the south-east of the country, the South-Moravian Region records the most intensive insolation (Fig. 4). Therefore, the amount of solar energy produced is the largest among the Czech regions. According to Aquatest Co., there are 2.2 million of solar panels in the region with the total installed capacity of 447 MW. But as it was mentioned above, the big solar power plants were booming on the agricultural land in 2010. In the future construction of solar panel on the buildings or degraded land (brownfields) mainly comes into consideration.

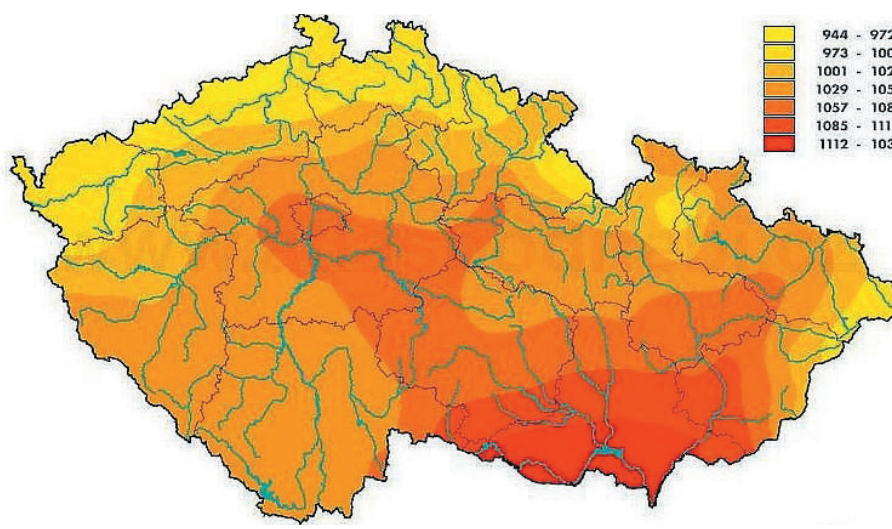


Fig. 4. Annual balance of sunshine [kWh/m2] 1961–2000
Source: Tolasz et al. (2007).

In contrast to the solar energy there are very poor conditions for the use of wind energy in the region (Cetkovský et al. 2010). The wind speed is insufficient across the majority of the territory (Fig. 5). The tops of mountain ranges where the speed of the wind is higher are included into the protected landscape. Only three wind parks are installed in the region. All other plans were rejected due to conflicts with landscape and/or birds protection (NATURA 2000). Similarly, the use of the geothermal energy has hardly any prospects in southern Moravia. According to the Ministry of Environment of the Czech Republic, there are only low-potential sources of the geothermal energy in the region, which are suitable for local heating and/or balneology purposes. There are two balneotherapy projects under implementation (Pasohlávky, Lednice) and one (Klobouky) is being designed.

Biomass for production of energy is the most prospective source among RESs in the South-Moravian Region which is known as a rural and agricultural territory. Moreover, the production of energy in agriculture has additional (sometimes the most attractive) impact: ensuring agricultural production and jobs after the download of food production (Järvelä et al. 2009) and a solution of the problem of waste elimination. Figure 6 illustrates an increasing use of bio-sources in the Czech Republic. The increasing production from bio-sources is evident. The minimum production from biologically degraded communal waste is the only puzzling aspect.

Both the purpose-grown plants (Fig. 7) and the post-harvest reminders of the conventional crops are used for the energy production. The bio-sources are used for heating, for combined heat and electricity production, for gas production and for vehicle biofuel production. The latter is not carried out in the region because the biofuel plants are situated in distant regions. The production of wood mass for heating is popular but this source is almost exhausted due to the landscape and biodiversity protection.

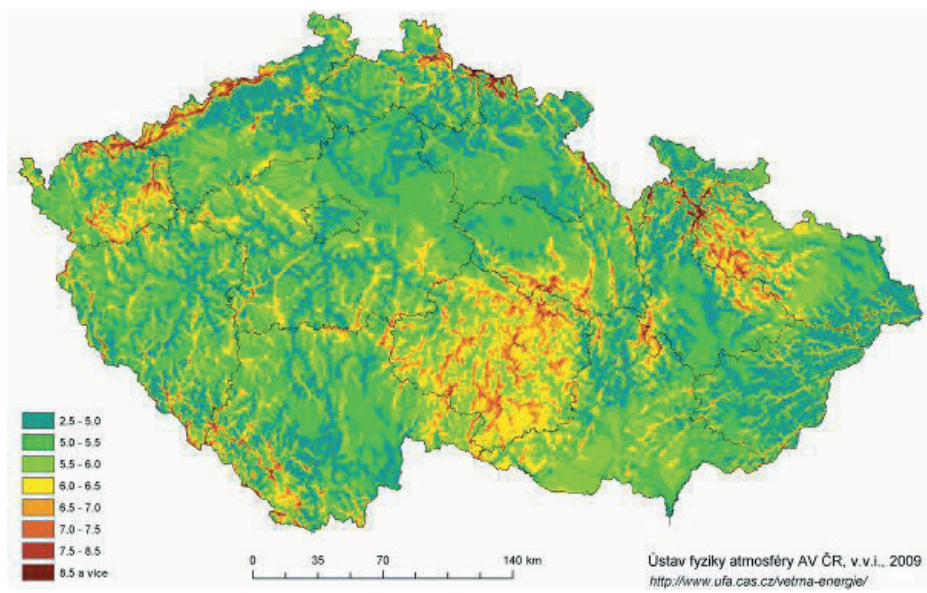


Fig. 5. Average wind speed at the height of 100 m above the ground surface
Source: Praha, Institute of Atmospheric Physics, Czech Academy of Sciences; http://www.ufa.cas.cz/struktura-ustavu/oddeleni-meteorologie/projekty-egp/vetrna-energie/vetrna-mapa.html

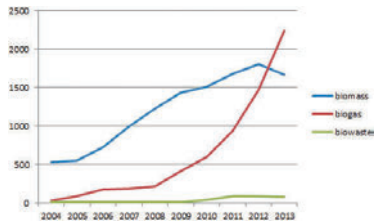


Fig. 6. Production of the energy from biological sources 2004–2013 in the Czech Republic [MWh]. Source: ERU (2014).

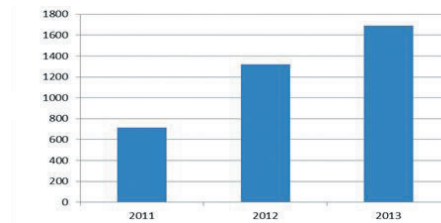


Fig. 7. Czechia: Sowing areas of energetic plants 2011–2013 [ha]. Source: Sowing areas 2007–2013, Czech Statistical Office, Praha.

Discussion: Different externalities connected with the RESs use for energy production

Usually, the environmental, technological, economic and social aspects of RESs are discussed. A decrease in greenhouse gas emissions is not only a clear positive aspect of the RESs use for the energy production but it is one of the main motivations for the whole activity. However, some adverse impacts have also been noted – not to mention environmental externalities of the production, transport and ecologically destructive impact of wind turbines, solar panels and other equipment used in this sector. The environmental problems are caused by the equipment construction, damage to the landscape type and also by some local problems of noise, smell and some other aspects of the individual plant operation. The intensity of the mentioned impact depends often on the size and localization of individual equipment.

The annual and daily fluctuations constitute the main technological disadvantage of RESs use for the energy production (except for the geothermal energy). In particular, the wind and solar plants are subject to the current meteorological situation. Water and bio-energy are also typically seasonal sources. Consumption also has its annual and daily fluctuations (Figs. 8 and 9). However both fluctuations can have different patterns – this is especially visible at the annual level. In the Central Europe conditions the peak demand for energy is recorded in winter when the offer of RESs is limited. Moreover, the specific amounts are only hardly predicable in the longer term – particularly in respect of wind, sunshine or floods. For such cases it is necessary to have some conventional backup sources.

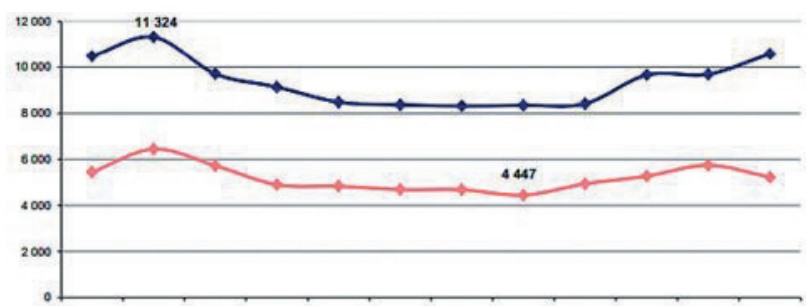


Fig. 8. Maximum and minimum energy consumption during a year
Source: ERÚ (2014).

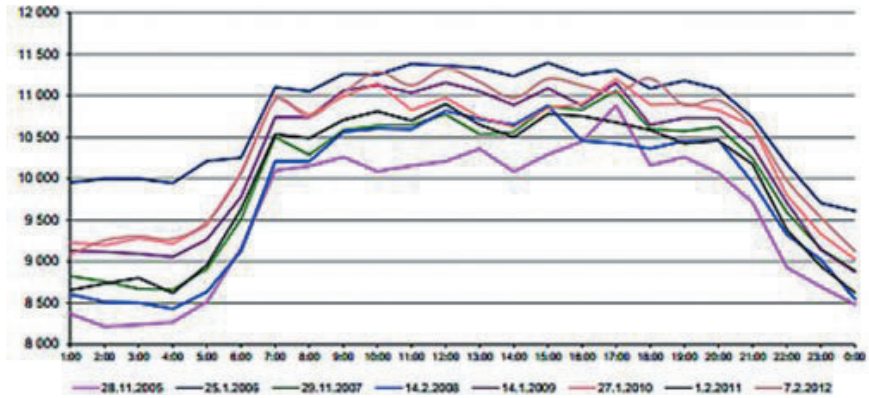


Fig. 9. Daily consumption with maximum energy consumption
Source: ERÚ (2014).

The economic aspects are connected with the production costs and energy prices. It is usually assumed that RESs are more expensive compared to the conventional fuels. Actually, for the solar, wind, geothermal and water sources the fixed costs are very high whereas the operational costs are extremely low. This is an optimum situation for the support of the mentioned RESs. Firstly – the fixed costs are known at any time and do not depend on the later price developments. Secondly – this is consistent with the EU philosophy which provides for the support of investments rather than operation. The way taken by Czechia – guarantee of high purchase price of energy – was false and resulted in its quick collapse. The problem is that this "mistake" has badly affected the reputation of RESs and led to the total withdrawal of support for RESs.

Energy prices are a function of private individual short-term relation between costs and benefits. The question of price depends on what is included in the costs. In particular, the use is linked with the costs of externalities which are usually not included in the individual costs. Table 2 shows prices of individual energy sources with and without of environmental costs of coal externalities. When the externalities are not included in the price, the coal is unrivalled cheapest source (especially after the price fall in connection with the use of shale gas in the USA). However, if the cost of externalities is included into the prices, RESs start to be competitive. How to create the political will for inclusion of costs of externalities into the coal purchase prices is a problem beyond the scope of this article. Heal (2010) claims the total lack of a discussion of this topic. When the non-renewable resources draw near their exhaustion, an increase of their prices could be expected. Though this is a question of a distant future, it could be reasonable to take it into account.

If the producers of non-renewable sources do not pay for the externalities, do the consumers accept some extra-payments for using RESs? Based on the example of the English town Bath Longo et al. (2008) found that the citizens would accept such extra--payments in the amount of 16–98 USD annually. But it is unlikely that the situation in Czechia would be similar.

As far as social aspects are concerned, it is usually assumed that the energy production from RESs has a positive impact on the job market. Based on the example of the USA Kammen et al. (2004) shows, that RESs generate relatively large number of jobs whereas Lehr et al. (2008) believe (based on the example of Germany) that such an impact is rela-

tively small and could be increased only with the export of such energy. Logically – if the use of water, wind, solar and geothermal energy sources implies low operational costs, these sources are most probably not able to generate jobs. The increase in job number comes into consideration only in the case of biological sources with higher operational costs.

Table 2. Prices of individual energy resources 2008

Source	Price [CZK/kWh]
Coal (without externalities)	1.18
Geothermal energy	1.87
Residual biomass	2.50
Wind energy	2.60
Water energy	2.80
Coal with externalities	2.82
Bio-gas	3.20
Biomass (energetic plants)	3.60

Source: European Commission (2008).

The greatest positive social impact of RESs use consists probably in the improvement of human health due to a decrease in the greenhouse emissions. But such an impact is hardly quantifiable and it is dispersed across the Earth whereas people are interested usually in their local conditions.

The social effects of the energy production from RESs, including obstacles and controversies of its development, were described by Mautz et al. (2008). The authors emphasize the conflict of two basic paradigms. On the one hand, there are the use of fossil and nuclear fuels, centralised production and distribution and oligopoly branch structure. On the other hand, we have decentralised production and consumption, plural structure of actors and ecology as a leading motive aim to promote.

The latter is important especially for the rural areas. Devine-Wright (2005) shows, that the use of RESs for energy production under a decentralized system could gain the support of the local inhabitants. This circumstance could be important in the process of community planning (Walker and Devine-Wright 2008). On the other hand, local people increasingly oppose to the mass production of energy from RESs – especially when the benefits are leaving the place of the production. Huttunen (2011) points out that the question is not easy. It is necessary to specify individual models of production to reach the true social sustainability.

Conclusion: self-sufficiency or a new sector of economy?

What type of the energy production from RESs is attractive and suitable for the rural development? Based on the aspects listed above it is clearly possible to recommend a development of decentralized systems of energy production and consumption in the rural areas. It provides a set of advantages:

- Use of local sources for local production, including a reduction of the transport needs
- Reduced dependency on the centralized market and its prices
- Reduced dependency on the transmission networks and their problems (including black-outs)
- Enhanced responsibility of inhabitants in the area of energy management
- Friendly acceptance by local people.

As for the mass production, the use of biological sources is recommended for following reasons:

- Production of biological energy sources is inherent in agriculture and forestry. The rural populations are prepared and qualified for it
- Biological energy sources are the only ones to generate jobs which are extremely important in the peripheral rural areas in particular.

The European experts agree more or less that the future of the rural areas lies in the multifunctionality. This concerns both agriculture as a sector and development of other sectors. The multifunctionality of agriculture is reflected (besides of the conventional production) in the landscape maintenance, eco-agriculture, development of agritourism and in the production of energy plants. This is also true for forestry: not only the production of wood but also non-wood production, ecological, water management and recreational functions, as well as the production of wood biomass. In this sense, growing ecological plants extends the multifunctionality of primary economy sectors which are inseparably linked with the rural areas (agribusiness in the economic theory).

However, hydropower, wind and solar power plants are also concentrated in the rural space because of their extremely low territorial productivity. Is this production a sector of rural area or a sector which is only situated in the rural area? It would be suitable to ask a question what could bring this production to rural areas. The number of jobs for individual localities is very limited. The financial benefits depend on the investor and owner of the land where the equipment is installed. Usually, local populations have neither necessary financial resources nor necessary technological and organisational knowledge. It could mean that investors would often be not local.

That is why in the case of such RESs for mass energy production in the rural areas, it is recommended to be very careful. In principle, it is important to mediate optimum conditions for local settlements and their inhabitants. The experience collected from the case studies shows that small villages could cover a significant part of their budgets with the payments of the energy producers. But it has to be negotiated in advance. If not, the energy production from renewables is not a new sector for the rural areas, but a sector consuming the rural areas.

So, the question whether to open the rural areas to the mass energy production of energy from RESs has not been answered conclusively. The use of rural areas for the mass energy production depends in each individual case on the specific assessment both experts and local people. Anyway monitoring of the developments is a task for future research.

Acknowledgement

The paper was elaborated within the grant project Nr. TP7/2013 of the Internal Grant Agency of the Faculty of Agronomy, Mendel University in Brno named "South-Moravian countryside as a space for the energy production from renewable sources".

References

Bergmann A., Hanley N., Wright R., 2006, *Valuing the attributes of renewable energy investments*, Energy Policy, 34, 9, pp. 1004–1014.

Carpenter J., Simmie J., Conti E., Povinelli F., Kipshagen J. M., 2013, *Innovation and new path creation: the role of niche environments in the development*, European Spatial Research and Policy, 19, 2, pp. 87–101.

Cetkovský S., Frantál B., Štekl J., 2010, *Větrná energie v České republice: hodnocení prostorových vztahů, environmentálních aspektů a socioekonomických souvislostí*, Ústav geoniky Akademie věd České republiky, Brno.

Devine-Wright P., 2005, *Local aspects of UK renewable energy development: exploring public beliefs and policy implications*, Local Environment: The International Journal of Justice and Sustainability, 10, 1, pp. 57–69.

Elliott D., 2000, *Renewable energy and sustainable futures*, Future, 32, 3–4, pp. 261–274.

ERÚ, 2014, *Ročnízpráva o provozu eneregtické soustavy ČR zarok 2013*, Energetic Regulatory Office, Praha.

EU, 2008. *The support of electricity from renewable energy sources*, Retrieved from http://ec.europa.eu/energy/climate_actions/do/2008_res_workingdocument_en.pdf Accessed September 30, 2013.

EU, 2013, *Energy in Figures*, Publications Office of the European Union, Luxembourg.

Frantál B., 2008, *Větrné elektrárny a NIMBY syndrom: analýza faktorů ovlivňujících vnímání a postoje obyvatel k rozvoji využití větrné energie*, [in:] *Udržitelná energie a krajina 2008*, Veronica, Brno, pp.21–25.

Hain J. J., Ault G. W., Galloway S. J., Cruden A., Mcdonald J. R., 2005, *Additional renewable energy growth through small-scale community-orientated energy policies*, Energy Policy, 33, 9, pp. 1199–1212.

Heal G., 2010, *Reflections – The economics of renewable energy in the United States*, Review of Environmental Economics and Policy, 4, 1, pp. 139–154.

Horst D. van der, 2007, *NIMBY or not? Exploring the relevance of location and the politics of voiced opinions in renewable energy sitting controversies*, Energy Policy, 35, 5, pp. 2705–2714.

Huttunen S., 2011, *Bioenergy production and social sustainability on Finnish farms*, [in:] Järvelä M., Juhola S. (eds.), Energy, Policy and the Environment, Springer, New York, pp. 173–192.

Järvelä M., Jokinen P., Huttunen S., Puupponen A., 2009, L*ocal food and renewable energy as emerging new alternatives of rural sustainability in Finland*, European Countryside, 1, 2, pp. 113–124.

Kammen D. M., Fripp M., Kapadia K., 2004, *Putting renewables to work: how many jobs can the clean energy industry generate*, Berkeley, University of California, RAEL report.

Knappe E. (ed.), 2009, *Vom Landwirt zum Energiewirt – die Landwirtschaft Südosteuropas zwischen Euphorie und Skepsis*, Leibnitz-Institut für Länderkunde, Leipzig.

Lehr U., Nitsch J., Kratzat M., Lutz C., Adler D., 2008, *Renewable energy and employment in Germany*, Energy Policy, 36, 1, pp. 108–117.

Longo A., Markandya A., Petrucci M., 2008, T*he internalization of externalities in the production of electricity: willingness to pay for the attributes of a policy for renewable energy*, Ecological Economics, 67, 1, pp. 140–152.

Mautz R., Byzio A., Rosenbaum W., 2008, *Auf dem Weg zur Energiewende*, Universitätsverlag, Göttingen.

Nonhebel S., 2005, *Renewable energy and food supply: will there be enough land?*, Renewable and Sustainable Energy Reviews, 9, 2, pp. 191–201.

Painuly J. P., 2001, *Barriers to renewable energy penetration: a framework for analysis*, Renewable Energy, 24, 1, pp. 73–89.

Rogers J. C., Simmons E. A., Converi I., Weatherall A., 2008, *Public perception of opportunities for community-based renewable energy projects*, Energy Policy, 36, 11, pp. 4217–4226.

Serianou E., Genoudi P., 2013, *Which factors affect the willingness of consumers to adopt renewable energy?*, Renewable Energy, 57, September 2013, pp. 1–4.

Šťastná M., Kniezková T., Náplavová M., 2012, *Embedding of rural businesses in the South Moravian region*, European Countryside, 3, 3, pp. 198–207.

Tolasz R., Brázdil R., Bulíř O., Dobrovolný P., Dumbrovský M., Hájková L., Halásová O., Hostýnek J., Janouch M., Kohut M., Krška K., Křivancová S., Květoň V., Lepka Z., Lipina P., Macková J., Metelka L., Míková Z., Mrkvica Z., Možný M., Nekovář J., Němec L., Pokorný J., Reitschläger D., Richterová D., Rožnovský J., Řepka M., Semerádová D., Sosna V., Stříž M., Šercl P., Škáchová H., Štěpánek P., Štěpánková P., Trnka M., Valeriánová A., Valter J., Vaníček K., Vavruška F., Voženílek V., Vráblík T., Vysoudil M., Zahradníček J., Zusková I., Žák M., Žalud Z., 2007, *Atlas podnebí Česka*, Český hydrometeorologický ústav, Universita Palackého, Praha, Olomouc.

Vaishar A., Jakešová L., Náplavová M., 2011, *Current problems of South-Moravian landscape*, European Countryside, 3, 4, pp. 265–281.

Walker G., Devine-Wright P., 2008, *Community renewable energy: What should it mean?*, Energy Policy, 36, 2, pp. 497–500.

West J., Bailey I., Winter M., 2010, R*enewable energy policy and public perceptions a renewable energy: A cultural theory approach*, Energy Policy, 38, 10, pp. 5739–5748.

Wüstenhagen R., Wolsink M., Bürer M. J., 2007, *Social acceptance of renewable energy innovation: An introduction to the concept*. Energy Policy, 35, 5, pp. 2683–2691.

Zoellner J., Schweizer-Ries P., Wemheuer C., 2008, *Public acceptance of renewable energies: results from case studies in Germany*, Energy Policy, 36, 11, pp. 4136–4141.

STUDIA OBSZARÓW WIEJSKICH
2015, volume 38, pp. 111–128
http://dx.doi.org/10.7163/SOW.38.7

KOMISJA OBSZARÓW WIEJSKICH
POLSKIE TOWARZYSTWO GEOGRAFICZNE
www.ptg.pan.pl

INSTYTUT GEOGRAFII I PRZESTRZENNEGO ZAGOSPODAROWANIA
POLSKA AKADEMIA NAUK
www.igipz.pan.pl

WHY HAS IRAN'S FAMILY PLANNING POLICY BEEN SO SUCCESSFUL? POLITICAL, DEMOGRAPHIC, SOCIO-ECONOMIC AND CULTURAL-GEOGRAPHICAL UNDERPINNINGS OF A DRAMATIC FERTILITY TRANSITION

Maryam Alaeddini[1] • David López-Carr[2]

[1] Iranian Ministry of Health
Teheran, Iran
maryam.alaeddini@gmail.com

[2] UC Santa Barbara
Department of Geography
4840 Ellison Hall, Santa Barbara, CA 93106-4060, USA
david.lopez-carr@ucsb.edu

Abstract: A solid international legal framework for family planning supports national family planning programs. Yet it is not by itself a program guarantee, especially among Muslim nations, many of which have stalled FP transitions and weak or absent government assistance for FP programs. The success of Iran's family planning program, therefore, is all the more noteworthy. Since its establishment in 1993, it has been one of the most successful state family planning (FP) programs in the world, having reduced the national annual growth rate from 2.7% in the late 1960s to little over 1% currently. This paper explores international and national legal, institutional, demographic, and cultural-geographical influences that may have contributed to its results.

Key-words: Iran, post-revolution, Islam, Shariat, family planning, fertility, population geography, urbanization, education, religion, globalization, cultural geography.

Introduction

Iran's total fertility, i. e. the average number of births per woman, decreased from 6 in 1986 to 1.9 in 2003. It has remained constant since (Word Bank Indicators Website[1]). The population growth rate dropped from 3.2 percent to 1.3 percent, a rate only slightly higher than that of Switzerland in 2011. This unusually rapid fertility transition has been one of the most inspiring models for countries wishing to reduce population growth, to improve maternal and child health, and to empower women. What were the main causes for this nation-wide achievement?

[1] http://data.worldbank.org/indicator

Some biological and behavioral factors, such as the use of contraception, directly affect the fertility rate. There are, however, socioeconomic, cultural and environmental variables that indirectly underlie the change in the fertility rate. For instance, studies indicate that fertility is usually higher in rural than in urban areas, and higher in households with low incomes (Bongaarts 1978; Merrick 2001; Carr et al. 2006). Moreover, it is well-established that quality and quantity of women's education are highly predictive determinants of the fertility rate (e.g. Caldwell 1980). Religion and culture can also be influential (Reichenbach 2009). Our aim in this paper is to discuss and evaluate various underlying fertility determinants that were present in Iran's FP. We examine the extent to which several of these socioeconomic, cultural and environmental determinants may have enabled Iran's decline in fertility.

Iran's first Family Planning policy was introduced in 1967 under Shah Reza Pahlavi to improve the status of women by reforming divorce laws, encouraging female employment, and acknowledging family planning as a human right. But the program had little success due to a low literacy rate, general apprehension, and other cultural obstacles. At that time, the average growth rate was 2.7%, similar to other developing countries lacking widespread family planning methods.

The FP policy was reversed in 1979 at the beginning of the Islamic Revolution (Larsen 2001). The government at the time implemented legal changes in marriage laws, including the reduction of the age of marriage, elimination of limitations on polygamy, provision of financial support for new couples, and provision of land to families with more than five children (Moinifar 2007). At that time, FP programs were viewed by government sources as a western imperialist influence over the country. Following the outbreak of the war between Iran and Iraq (1980–1988), Ayatollah Khomeini urged people to have larger families to support a "soldiers for Islam" increase to "an army of 20 millions". According to United Nations data on Iran, the population doubled from 27 million in 1968 to 55 million in 1988. In the post war period, Iran's rapid population growth was considered by many a crucial obstacle to reconstructing the country. In response, Ayatollah Khomeini reopened discussions on the subject of FP (Larsen 2001).

The founder of the I.R. consented to FP based on the following terms:

- Consensus of both spouses on the use of contraceptives
- Contraceptives should not have significant side effects
- Reversibility (allowing for the possibility of a future pregnancy)
- The method used should not be accompanied with sin (e.g., same sex service providers should be consulted) (Malekafzali 2004, p. 247)[2].

By December 1989, Iran had revived its national FP. The main goal was to limit family size to three children by encouraging women to wait three to four years between pregnancies, and by discouraging child bearing for women younger than 18 or older than 35. In May 1993, the Iranian government passed a national FP law in which it encouraged couples to have fewer children by restricting maternity leave benefits after three children. To accomplish this, there was significant involvement of the following ministries: Education; Culture and Higher Education; Health and Medical Education, and Islamic Culture and Guidance. Also, the Islamic Republic of Iran Broadcasting Corporation cooperated with the abovementioned ministries in raising public awareness on the enacted FP law (Lar-

[2] It is worth mentioning here that abortion is not defined as a population contraceptive tool and is prohibited in the Islamic Republic except under certain conditions.

sen 2001). The startling results of the national FP program are, despite rapid transitions in South Asia, northern Africa, and Latin America, a global anomaly and merit analysis. We argue that several factors were critical in supporting the success of Iran's FP program.

First, as we will explain in greater detail in section II, the international law provides a supportive environment for Iran to implement its FP program.

Second, as we will detail in section III, different parts of the government collaborated to provide a legal context aimed at increasing public awareness, providing incentives, and increasing accessibility to contraceptive tools, especially in rural areas.

Third, as discussed in section IV, rapid economic development during the period had several direct and, perhaps more importantly, indirect influences on fertility. As the cost of child rearing increased so did both the average age of women giving birth for the first time and the supply of, and demand for, contraceptives. At this time, the Iranian society was experiencing urbanization, and socio-cultural change, both supportive of a lower fertility rate.

Fourth, a significant and relatively early process of urbanization and industrialization which followed the revolution considerably narrowed the urban-rural gap in health care access (section V. A).

Fifth, Iran experienced a rapid improvement in women's education after the revolution (section V. B), a critical independent determinant of fertility globally.

Sixth, we argue that the impact of globalization on local cultural geographies likely increased the use of contraceptives (section V. C).

Finally, as we will discuss in section VI, contrary to what has occurred in many parts of the world, rather than hinder FP adoption, religion appears to have played a mostly supportive role in Iran's FP transition, with many religious leaders, including Ayatollah Khomeini, actively supporting the program.

Underpinnings of Iran's Fertility Transition

International law

From the perspective of international law, family planning programs are closely related to reproductive rights and women's rights. A key issue regarding reproductive rights is autonomy. Its essential features are respect, dignity and control. The underlying tenet is that humans, in general, and women in particular, should be able to control and make decisions about their reproductive lives. Rather than isolating reproductive rights, this holistic view incorporates these rights into all aspects of life. (Freedman and Isaacs 1993).

Population movements have played an important role in shaping reproductive rights discourse. According to some theories of development, population growth is a serious obstacle to development (e. g. Coale 1986; Hoover 1958). The World Bank is a strong proponent of population programs. "The Bank views population assistance as its highest priority in Africa" (World Bank, World Development Report 1986). However, one might wonder whether population movements oppose reproductive rights. The Chinese one child per family policy may be an instance where the population program violates reproductive rights. However, when population programs are more subtle, the issue is less clear. A key to population programs is the provision of incentives and disincentives. But are incentives inherently coercive? Perhaps not. It seems that there is a difference between population

policies addressing health concerns, and those addressing merely demographic ones. Population programs that arise from health concerns may have a better chance of finding wider political embrace.

International laws regarding reproductive health have been shaped by national and international women's rights and population movements. Traditionally, international law's main concern was relations among nation-states. After World War II and following the establishment of the United Nations, a big change occurred in the scope of international law. The United Nations, as an independent entity in international law, actively promoted universal rights in this new world order. Moreover, the emergence and progress of the right to reproductive choice is due to a series of international and non-governmental organizations and conferences working to define reproductive rights and specify their implications.

In 1968, 20 years after the Universal Declaration of Human Rights, human reproduction received international legal attention at the International Human Rights Conference in Tehran. One of the resolutions in Tehran was that "parents have a basic human right to decide freely and responsibly on the number and spacing of their children and a right to adequate education and information in this respect" (UN 1968). Since then, the Tehran Declaration has been the starting point for the UN member nations and nongovernmental organizations in clarifying the details of a person's reproductive rights.

According to many development theories in the 1960s (e.g. Hoover 1958), uncurbed population growth in developing countries such as China and India would lead to environmental destruction and social problems. Because overpopulated developing countries had discouraging policies toward contraception, these problems were even more serious. To the delegates in Tehran, overpopulation was regarded as a threat to humankind. The Tehran Declaration increased pressure on developing countries that had resisted the use of contraceptives within their borders, to address overpopulation (see Freedman and Isaacs 1993).

At the time of the International population conference in Mexico City (1984), poor nations came to a greater realization of the severity of rapid population growth and infant and child mortality. The hope for a new economic international system had paled due to developing national debts to the IMF and World Bank. OPEC was also less inclined to assist the developing countries, compared to the 1970s. In the recommendations of the conference, governments should "as a matter of urgency" make family planning services "universally available" (UN 1984).

In 1994, the International Conference on Population and Development (ICPD) was held in Cairo. The ICPD defined a new population policy which gave prominence to reproductive health and women's empowerment. It decreased the demographic focus in population policy and increased the economic, human rights, and socio-political foci. The Program for Action was tasked with formulating the consensus position on population and development for the next twenty years (Mcintosh and Finkle 1995).The Program for Action asks governments to address such issues as reduction of maternal mortality, prevention and treatment of sexually transmitted diseases, including HIV, prevention and treatment of unsafe abortions, and the empowerment of women. According to the new model, programs that act directly on fertility are often coercive and abusive of women's rights to choose the number and timing of their children. Rather, the international community needs to adopt programs that empower women through increasing education,

providing jobs, lightening domestic responsibility, and improving social status. Family planning should be only one component in a comprehensive plan of reproductive health.

The I.R Iran endorsed the Program for Action and, for the most part, it committed itself to implementing policies recommended by the program. Five years after ICPD the Iranian delegate to the EU stated: "I would like to reiterate that the Government of the Islamic Republic of Iran is highly committed to the recommendations of the ICPD-PoA and, with UNFPA active support and assistance, has been quite successful in their implementation. Of note: the budget for the implementation of RH/FP program recommendations was continuously increased, reaching a total of 12 million dollars" (UN 1999).

International legal context for family planning supports, but does not guarantee, a national family planning program. Many Muslim nations and weak or absent government assistance for FP programs have stalled FP transitions.

Why then was Iran's implementation of its program successful? International law and policy appear to have been buttressed by a state legal context that included the earnest application of rural family planning programs, and a suitable cultural geographical context which included relatively early and significant industrialization and urbanization, and local cultural elements – including ways in which Iran embraced globalization, education and the support of religion. Next we discuss the state legal context.

State legal context

On the one hand, the effective implementation of the program by the State provides us with a top-down explanation for the success of the program. On the other hand, the social and cultural context in which the program was implemented led to high public participation. Without high participation from the public FP could not have been as successful as it was. Cultural globalization, urbanization, and increases in women's literacy are part of the social and cultural context in which FP was implemented but these are only as relevant as the state allows.

In this section, we will discuss the role of the State in the program. It is worth noting that all governments after the revolution adopted the same policy toward FP. The implementation of FP was never a matter of dispute among political parties and governments until 2011. We discuss first the State policies and then proceed to explain the role of institutions. Moreover, health clinics, which we will address at the end of the section, played a crucial role in implementation of the program in rural areas.

Policies

In 1990, the Council of Ministers approved a Birth Limitation Council to be implemented through collaboration among various ministries and departments. Its goals were to achieve the following (Aghajanian 1998, p. 12):

1. Provide educational programs for the public on population issues
2. Provide various high quality family planning methods for married couples
3. Carry out research on different aspects of family planning delivery and population policy.

The objectives of the Birth Limitation Council were to decrease the birth rate, population growth rate and total fertility rate.

Supplementary Policies

Following the acceptance of, and consensus on, family planning by religious and political leaders, the government envisioned the following guidelines to implement the plan: provide face-to-face education for at-risk groups to promote family planning; integrate family planning and population control in other national development programs; enhance the health provider's skills by training and retraining, especially in the area of the new methods. The family planning system should be integrated with the national primary health care system to provide educational materials on population and family planning for high school and university curricula. It should collaborate closely with international organizations in order to learn from their experiences and share the lessons learned from Iran's experience with others, especially with Islamic nations (Malekafzali 2004, p. 248).

Collaborative Arrangements among Ministries

From the perspective of institutional theory, social, economic, religious and political institutions interact with population policy changes, and with individual attitudes in response to these policies (McNicoll 1980, 1985, 1994; Greenhalgh 1988). The revolution made abrupt changes in the existing institutions. After the Islamic revolution, a revolutionary Jihad movement formed to develop rural areas. It's worth noting that 'Jihad' does not merely mean holy war; its original meaning is ''struggle''. The revolutionary Jihad movement was a *non-military* movement with a religious motivation to develop underdeveloped areas. The formation of a revolutionary Jihad movement expedited the process of development in rural areas.

Another institutional change took place with the health clinics. Health clinics had existed before the revolution but after the revolution the ministry of health expanded its activities by providing more human resources and facilities. Another important institutional change was the acknowledgment of the role of women in communities. Although participation of women in the labor force did not increase, nevertheless, as Moghadam (1998) argues, after the revolution women were not driven out of the work force.

A further critical aspect of Iran's family planning was the creation of a legal framework of collaborative cooperation among various ministries in executing the program. The legal framework was enacted by the First Economic, Social and Cultural Development Plan of the Islamic Republic of Iran sanctioned in 1989. Following this enactment, the Council of Ministers adopted it for each ministry. These tasks directly or indirectly relate to family planning. The following are the tasks that each ministry was charged to undertake in FP development (Aghajanian 1998, p. 16).

Ministry of Education

I. Integrate population education materials in high school textbooks in order to raise awareness, especially among girls, of high fertility.
II. Increase literacy among all socio-economic ages, especially through adult education. Also, increase enrollment for rural female school-age population.

Ministry of Islamic Culture and Guidance

I. Produce more programs for social and community-based involvement of women.
II. Create more programs to raise public awareness on the importance of reducing population growth rate and the disadvantages caused by a high growth rate.

Ministry of Higher Education

I. Incorporate more demography and population courses into the core university syllabi.
II. Increase women in teacher training programs, and provide incentives to work in remote and underdeveloped areas.
III. Increase research on population and family planning in universities.

Civil Registration Organization

I. Implement an effective system to register vital events such as births and death, especially in less developed areas (this helped improve program evaluation).

Health Clinics in Rural Areas

The development of rural health clinics was important for the success of FP programs in rural areas. In 1972, the pre-revolution regime estimated that 2,450 clinics in rural areas would be enough to "provide good access". However, the Islamic regime aimed to establish 18,000 rural clinics to empower the FP program (Moore 2007, p. 40). Moreover, the rural clinics built on a rapidly expanding rural health infrastructure, known as Health Network System. As a result, when the FP program was added to the Health Network System, it was regarded as a part of the rural development program and not an attempt to limit rural population growth. Each health clinic serves about 1500 individuals with at least two staff, at least one of whom is a woman. Staff members are usually recruited locally and trained for two years in primary health care delivery (Salehi-Isfahani et al. 2010, p. 4).

Figure 1 shows the health clinics by year of establishment (Salehi-Isfahani et al. 2010, p. 5). As Figure 1 shows, in 1985, when the law for mandating a Health Network System came into effect, the pace of construction of health clinics increased. By 2005, the program covered about 90% of the rural population with about 16,560 health clinics. The health clinics provided active (as opposed to passive) service delivery. As Salehi-Isfahani et al. (2010, p. 2) indicate, active service delivery considerably helped the success of FP program. Passive delivery depends on initiatives of the individuals. However, in active service delivery, the health clinic made sure that each woman had access. For example, in passive service delivery, if a woman on the pill ran out of birth control, she could go to a nearby town to purchase birth control pills or wait for the next mobile unit's visit, which might take up to a month. However, in active service delivery, the health worker would

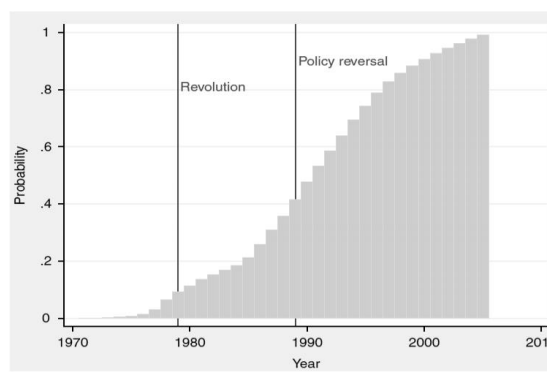


Fig. 1. The distribution of health houses clinics in rural areas (Salehi-Isfahani et al. 2010)

make sure that she had her monthly supply. The information on each individual would be kept in huge databases. In the paternalistic and conservative rural culture of Iran, the difference between active and passive service delivery can represent the difference between having, or not having, access to birth control technology.

Economic context

Many argue that the drastic fertility reduction in Eastern and Central Europe during the 1990s should be explained mainly in terms of economic factors (e. g. Kohler and Kohler 2002; Rutkevich 1996; Witte and Wagner 1995) such as falling income level, a rise in economic and labor-market uncertainty etc. The rise in household expenses and cost of raising children, together with uncertainty about employment, may force parents to reconsider the number of children they have. However, it seems unlikely that the fertility rate reduction in Iran can be explained merely in terms of economic factors.

While fertility rate, was consistently dropping from 6 in 1986 to 1.9 in 2003 (World Bank Indicators), as Figure 2 shows, we observe a smooth increase in GDP growth facilitated by a rapid increase in oil investments (Esfahani and Pesaran 2009, p. 10). In 1995, due to a sudden change in exchange rate we observe a very high inflation rate. However, if we set aside the unusual increase of inflation in 1995, we observe that the price of inflation has a smooth decreasing trend. There was also no significant change in male or female unemployment from 1989 to 2008 (World Bank Indicator Website). So we may say that there is no significant increase in labour-market uncertainty. As we will see in the next section, due to urbanization, we also note improvement in the standard of living during this period.

The female mean age at marriage increased from 19.9 in 1986 to 22 in 2004[3]. However, the increase in the female marriage age may not be due to purely economic factors

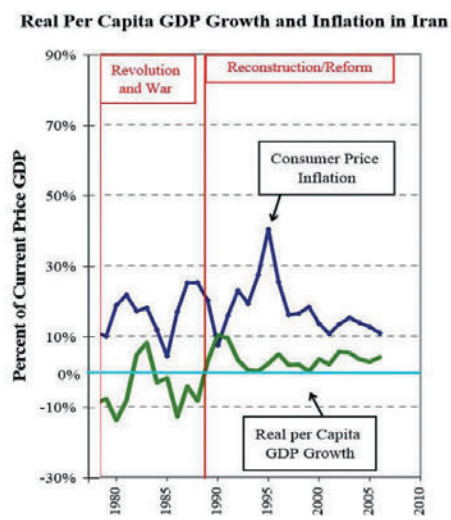


Fig. 2. GDP growth and Inflation in Iran (1980–2010) (Esfahani and Pesaran 2009)

[3] From the website of national organization for civil registration. (http://www.sabteahval.ir/Upload/Modules/Contents/asset99/AmarHayati/et--83.pdf)

for we don't observe a parallel rapid increase in men's marriage age. Moreover, there are other factors contributing to this phenomenon. Some scholars have attributed the increase in women's marriage age to socio-cultural change after the revolution, women's education, urbanization, and access to the means of communication (Mahmoudain 2005). Other studies show that a result of the baby boom following the revolution was half a million more women than men at the age of marriage (Jafari-Mojdehi 2003). Perhaps in addition to serving as a direct cause of fertility decline in Iran, as observed in other contexts with rapid fertility decline such as rural Mesoamerica in recent years (Davis and López-Carr 2010; Carr 2007; Sutherland et al. 2004), rapid economic growth may have facilitated several other cultural socio-economic and demographic factors all related to decreasing fertility in post-revolutionary Iran. We now discuss this larger cultural and religious context in relation to falling fertility in Iran.

Cultural context

Industrialization and Urbanization

The implementation of FP in Iran did not take place in a vacuum. Several crucial social and historical events appear to have facilitated FP implementation. If we take a closer look at the groups and agenda involving the revolution and post revolution, we observe two main uniting themes. First, shared opposition to the Shah and all political organizations created by him. Second, a rather simplistic belief that Iran had all the natural and human resources for rapid socioeconomic development and modernization achieved by Westerners. Even the conservative clerics who quickly took over the power left by the sudden disintegration of the old regime were in favor of these popular ideals.

Table 1. Socioeconomic indicators for Iran

	1976	**1986**	**1996**	**1998**	**2003**	**2008**	**2011**
Maternal mortality per 100,000 births	277.0	140.0	37	60	44	31	25
Life expectancy	58.0	66.0	67	70	72	74	75
Adult Literacy Rate (%)	46.9	61.3	73		77	85	84
Youth literacy (% of people ages 15–24)		75.0	93		93	99	98
Urbanization (%)	47.0	54.6	61.3	63	66	68	69

Source: World Bank Development Indicators.

Table 2. Percent access to amenities by urban and rural areas

	1977		**1997**	
	Urban	**Rural**	**Urban**	**Rural**
Electricity	91	15	99	92
Piped Water	80	12	98	78
Telephone	16	1	53	12
Radio	78	52	78	60
TV	52	2.4	93	69

Source: Mehyar and Tajidini (1998).

According to Abbasi-Shavazi et al. (2002, p. 15), almost all of the revolutionaries endorsed development and modernization by raising the level of education of all citizens, improving their health status, and meeting their basic needs by means of the oil glut of the early 1970s. In his first speech on his return to Iran, Ayatollah Khomeini publicly announced that the new regime would not only provide all social services for free, but also would abolish all existing taxes and arrange for the regular disbursement of oil revenues among the people. Shortly after the revolution, clerics in charge of the Islamic Housing Foundation announced that the government would give free land and interest-free loans to build houses in Tehran. It's believed that this is one of the reasons behind the tremendous increase in migration to Tehran during the first year after the revolution (Abbasi-Shavazi et al. 2002, p. 15).

The constitution of the Islamic republic of Iran envisages a welfare state. It anticipates many of the ideals currently advocated by the United Nations as part of its new paradigm of Sustainable Human Development (Mehryar 1997). During the eight-year Iran-Iraq war, it seemed reasonable that the government of the IR would devote fewer resources to the social development programs and enshrined priorities in the constitution. However, a recent study of basic social services, i.e. primary education and health, showed that even at the height of the war, the government invested a sizeable proportion of its annual budget in social services (Mehryar et al. 1999).

Moreover, the IR of Iran was making a constant effort to target the neglected rural and marginalized classes of society. Due to investment in social development and services there have been significant changes in modernization and living standards. Table 1 and 2 demonstrate that both urban and rural populations experienced a higher standard of living after the revolution.

According to Table 1 there was a substantial fall in both infant and maternal mortality rates and a rise in life expectancy. Adult literacy has risen greatly. Moreover, the urban-rural gap has been considerably narrowed in terms of access to health, education and modern amenities.

Expansion of the Literacy Program

Women's educational attainment in fertility decline is of great importance. For example, Caldwell proposes several mechanisms through which education is associated with declines in fertility (Caldwell 1980, p. 249).

Table 3 shows a rapid increase in women's literacy after the revolution. As Table 3 suggests after the revolution the number of women with a high school diploma increased by more than 100%. The increase in the number of educated women continued. For example, the ratio of women to men admitted to undergraduate school was .65 in 1996 and 1.67 in 2004. The rise of women's attendance in both primary and higher education is partly due to government investments.

Changes favoring fertility decline also occurred at the household scale. As Abbasi-Shavazi et al. (2002, p. 17) note, the share of educational expenses in total household expenditure remained under 1 per cent for the period 1979–1989 for both urban and rural households. It rose above 1 percent of the total expenses of urban households in 1990 and continued to rise until 1995 up to 2.3 percent of total household expenses. As for rural households, there has been a steady rise in the share of educational expenses in the total household expenses since 1990.

Table 3. Women's education, comparison between 1976 and 1996 in Iran

	1976	**1996**
Proportion of girls in primary-level education	66 per 100 boys	90 per 100 boys
Proportion of girls in secondary-level education	59 per 100 boys	81 per 100 boys
Proportion of women in higher education	47 per 100 males	68 per 100 males
Number of non-student women with a secondary school diploma	447,000	2,100,000
Number of non-student women with tertiary education	75,000	495,000

Source: Abbasi et al. (2002).

Local and Global Culture

In Iran, there is a nation-wide use of birth control between marriage and the first pregnancy. According to Shahvazi and Morgan (2009), there may be two reasons for this social phenomenon. The first can be called the conjugal marriage explanation in which the use of birth control between marriage and first pregnancy was due to a new form of strong emotional bond between husband and wife and to egalitarian values. The conjugal marriage legitimizes partnership for companionship and intimacy, not solely for procreation. Some believe that the emergence of this new form of marriage was influenced by globalization and westernization in Iran. We should note that although Iran is not an active player in economic globalization, it was by no means isolated from cultural globalization. Goode (1963) argued that "Western ideologies supporting free mate choice and egalitarianism were overwhelmingly attractive to non-Western indigenous young people". And if we take into consideration economic development and industrialization, we observe that these elements give young people freedom from elders and freedom to act in the way they desire. Hand in hand, globalization and industrialization expedited the process of couple-centered egalitarian relationships in Iran.

The second reason that Shahvazi and Morgan (2009) offer for the use of birth control between marriage and first pregnancy is the religious influence. Islam recommends early marriage. Accordingly, the Islamic government of Iran encourages people to marry early by providing resources. The State and its political/religious actors also encourage postponing parenthood with birth control. Postponement of parenthood is, in apart, an economic decision, but a decision also influenced by cultural globalization. Parents, both father and mother, want time for school and work. They want to save money for the future of their children.

Common to both these explanations are cultural globalization and the rise of civil society (Carr and Norman 2008). While global values play an important role in the use of birth control between marriage and the first pregnancy, the religion and local cultural geography are also determinants of the changing population geography of Iran (e.g., Trewartha 1953; Kearns 1993; Price et al 1993).

Religion

With regard to the religion, one of the most contested issues worldwide is reproductive right. Religions have obstructed reproductive rights at times. Many of the world's religions, particularly Abrahamic religions such as Christianity and Islam, have commands and codes of behavior related to sexuality and reproduction. Abrahamic religions take serious

stands against non-conservative codes of behavior concerning regulation of marriage, sexuality, gender relations and procreation. Such religions resort to orthodox beliefs for universal and timeless adherence among their followers. The Roman Catholic Church has at times opposed sexuality and reproductive rights (Reichenbach 2009). The attitude of the Catholic Church on the right of family planning was expressed in 1983 in this way: "The spouses have an inalienable right to found a family and to decide on the spacing of births and the number of children to be born, taking into full consideration their duties towards themselves, their children already born, the family and society, in a just hierarchy of values and in accordance with the objective moral order which excludes resource to contraception, sterilization and abortion". The Church has not yet changed its view on this issue (Eriksson 2000, p. 186). Yet, globally we observe that socio-economic factors, ultimately, have trumped religion in FP adoption in Christian-dominated societies.

Unlike Catholicism, Islam has no central hierarchy governing its church. There are different stands on the acceptability of family planning. Among Islamic leaders, reformists argue that there is no prohibition on family planning in the Quran, and no reference in the prophet's writing on the withdrawal method to prevent pregnancy. They conclude that modern contraceptives are permissible. According to the other school of thought, the traditionalists, it is God who plants his seed where he wills. The traditionalists are totally against withdrawal because they consider it tantamount to killing the human seed. However, religious leaders from many Islamic countries have issued *fatwa's* in favor of family planning since the early 1990s.

While some argue that pro-birth tendencies are inherent in Islam, others think that Islamic beliefs are not responsible for the population growth in many parts of the Muslim world. The Islamic law views marriage as sacred and regards family as an important component of Islamic society. The *Quran* recommends marriage and procreation to those who are physically and economically capable of raising a family. As opposed to other religions where sexual relations are allowed only for having children, Islam does not view sexual relations exclusively as a means to procreate (Omran 1992).

The *Shia*, contrary to the *Sunni*, stress the concept of *ijtihad* (i.e. independent reasoning) which is the exertion of effort by a trained jurist taking into account all sources of Islamic law to discover a rule for a particular situation. *Ijtihad* is a mechanism to keep Islamic law current with the intellectual, political economic, legal and technological development of a society. In *Shia*, there is no central authority who can give the ultimate, indisputable ruling for a particular situation. In other words, there is not a hierarchal relation among the clergies. This means that there is decentralization with dissimilarities among various clerics' *fatwas* on a common issue. As a result of the lack of shared *fatwas* among clerics on family planning, different *fatwas* govern the issue (Afshar 1985). Many clerics opine that family planning increases the well-being of Islamic society and that it can be accommodated in Islam. This opinion is supported by the following quote by Aghajanian (1998): "According to the narrations, quotations, Hadis, and verses of holy *Quran*, the top priority for the Muslim community is the social welfare of the Muslims. Benevolence, virtue and prosperity in life are the first principle(s) of living under the shade of the tremendous tree of religion. This notion can be conceived from every line of *Quran* narrations and from the quotations from Prophet Mohammad" (Aghajanian 1998).

In general, a new policy is acceptable to Islamic law if it does not violate prohibitions of the *Quran* and the Prophet's deeds and speeches. A historical review of Islamic juri-

sprudence reveals that *coitus interruptus* was allowed in the Prophet Muhammad's time. The companions of the prophet used to practice it. The Prophet came to know about it and did not prohibit them (Mahmood 1977, p. 91).

Family planning is not a new issue in the history of Islam. For instance, the medieval Islamic scientists Avicenna and Razi used an herbal prescription for the prevention of pregnancy. In contemporary times, the first *fatwa* on family planning in Iran was issued by Ayatollah Bahauddin Mahallati in 1964. The *fatwa* declares "various methods of pregnancy control are not prohibited by religious laws, as long as their effect is temporary and do not make women sterile" (Apud and Mehryar 2005). It is worth considering that even before Reza Shah there was legalized family planning; it became an issue for religious leaders. In general, the Muslim world had to consider family planning to deal with resource scarcity due to high population growth. Ayatollah Khomeini resisted family planning practices at the beginning of the Iran-Iraq war when soldiers were needed. But afterwards, he accepted it because the country was not capable of dealing with high population growth and its collaterals. In promoting family planning in Iran, the religious leaders played an active role to the extent that FP was endorsed in Friday prayers.

Following the Islamic revolution, the relationship between government and religious power changed. Before the revolution, the religious schools and leaders were financially and structurally independent from the government. The religious leaders mainly opposed the Pahlavi regime due to its anti-religious and pro-western position. After the revolution the religious leaders were in a position to make decisions for the whole nation. With the doctrine of the Guardianship of the Jurist (i. e. *Wilayat al Faqih*), one of the top religious leaders took over the State's political-religious position. Although the original *Shia* provided no hierarchy among clerics, the doctrine of the Guardianship of the Jurist (designed by Ayatollah Khomeini) established him in practice as the first religious leader. With the highest political and religious standing, he was in charge of legitimizing the state and government and making all important national decisions.

Hence, when Ayatollah Khomeini did not accept the continuation of the Shah's family planning program, it became ineffective. However, given the original *Shia* position, people are not required to follow the leader in all religious issues. Rather, they can choose a cleric they believe to be the most knowledgeable on religious issues as their own religious authority. If a religious authority finds an issue in disagreement with the Quran, Prophet's act, speech and behaviors, or consensus among religious community, he can veto the law related to the issue. Thus each religious leader's judgment can potentially affect FP. However, almost no religious authority in Iran found the FP to contravene any of the three main pillars of Islamic law. In sum, it appears that many clerics, including Ayatollah Khomeini, played an important role in the success of FP. Others who were not particularly in favor of FP did not obstruct it.

Discussion and conclusion

Some authors argue that economic hardship plays a distinctive role in the decrease of Iran's fertility rate (Abbasi-Shavazi 2002, p. 429). However, we find this claim unconvincing for several reasons. On the one hand, the major drop in fertility rate occurs from 1989 to 2003 when we observe a post-war economic development in Iran. On the other hand,

while there is a severe economic hardship during war time, the fertility rate remains high. Moreover, we observe a dramatic drop in fertility rate from 1989 to 2003 and continuing to 2011, with no serious negative economic event occurring in this period. Economic factors alone can't explain this unusual phenomenon. In this time frame, other phenomena such as significant institutional changes, a noteworthy increase in women's education, and a rather radical cultural change, were unfolding concomitantly. These were likely also critical determinants of the fertility rate. Indeed, perhaps it is more plausible to hold that the aforementioned changes played a bigger role in the decrease in national fertility rate than did economic factors.

The economic hardship may not have been a major contributing factor in Iran's decreasing fertility rate. Yet, the increasing cost of raising children may have had an impact on the drop in fertility rate. But, again, this is supported by an increase in living standards, rapid urbanization, rapid progress in education, and local and global cultural change all amenable to lower fertility rates. The changes in question in this period led some parents to contend that they should raise their children with higher living standards. To that end, and in keeping with other societal changes of this period, women's marriage age shifted upward.

We do not argue that the whole credit of the successful FP should be given to the government. A major point of this paper is that for a State family program to be successful on economic, social, and ethical grounds it needs appropriate contextual support. The State program has a better chance of success when there is support at the grass-roots level. This requires appropriate social, cultural, religious and global foundations.

We are inclined to think that after the war, urban people, especially women, adopted a rather new life style because of globalization, local change in culture, urbanization and significant grassroots support for reformists, which led to the election of a reformist government in 1997. The government's FP program, among other factors, raised the public's awareness of the importance of raising children with higher living standards. On the other hand, FP implementation was facilitated for families by huge material and cultural support from the government. The government's role in rural areas was, we believe, even more important. However, due to a rapid urbanization, the gap in cultural values in rural and urban areas was also decreased. The religion may not have been a major contributing factor to the decrease in Iran's fertility rate but it was important especially in rural areas that it did not hinder the FP program.

The supporting international legal environment should not be overlooked. While I. R. Iran has suffered from its international relations with the global community, the consensus among local authorities and global institutions on the importance of the program helped I. R to become part of the global FP community, and thus had an encouraging impact on local governments.

We believe, therefore, that the success of FP in Iran cannot be explained by a single factor. Many different and interrelating factors help explain the phenomenon in question. We argue that Iran's success in its national FP program was rooted in its implementation within a suitable and fertile international, national, institutional, socio-economic, demographic, and cultural geographical context. Iran pursued its FP when the international community demanded such a program and when a rapid process of urbanization was well underway. Significant progress in women's education after the revolution was an additional critical determinant in decreasing the national fertility rate. While the fertility rate is

often higher in rural areas, the government, through establishing health clinics, provided effective access to contraceptive tools and increased public awareness of the program. Contrary to common perception that religion is an impediment for FP adoption, religion did not play such a role in Iran; quite to the contrary, the evidence points to religion's important role in its success. At the time of writing, Iran has announced a new family program. An assessment and analysis of its performance are subjects for future scholarship.

References

Abbasi-Shavazi M., Mehryar A. et al., 2002, *Revolution, War and Modernization: Population Policy and Fertility Change in Iran*, Journal of Population Research, 19, 1, pp. 35–36.

Abbasi-Shavazi M., 2002, *Recent changes and the future of fertility in Iran*, United Nations. Department of Economic and Social Affairs. Population Division, New York, 2004, pp. 425–439.

Adler M. A., 1997, *Social change and declines in marriage and fertility in Eastern Germany*, Journal of Marriage and the Family, 59 (1), pp. 37–49.

Afshar H., 1985, *Women, State and Ideology in Iran*, Third World Quarterly, 7, 2.

Aghajanian A., 1998, *Family Planning and Recent Fertility Trends in Iran Measure Evaluation Project*, Population Center University of North Carolina, pp. 13–14.

Apud A., Mehryar H., 2005, *Shi'ite Teachings. Pragmatism and Fertility Change in Iran*, [in:] Jones G. W., Karim M. (eds.), *Islam, the State and Population*, London, p. 133.

Bongaarts J., 1978, *A framework for analyzing the proximate determinants of fertility*, Population and development review, pp. 105–132.

Caldwell J., 1980, *Mass Education as a Determinant of the Timing of Fertility Decline*, Population and Development Review, 6 (2), (Jun, 1980), pp. 225–255.

Carr D. L., Pan W. K., Bilsborrow R. E., 2006, *Declining Fertility on the Frontier: The Ecuadorian Amazon*, Population and Environment, 28, 1, pp. 17–39.

Carr D. L., 2007, *Resource Management and Fertility in Mexico's Sian Ka'an Biosphere Reserve: Campos, Cash, and Contraception in the Lobster-fishing Village of Punta Allen*, Population and Environment, 29 (2), pp. 83–101.

Carr D. L., Norman E., 2008, *Global civil society? The Johannesburg World Summit on Sustainable Development*, Geoforum, 39, pp. 358–371.

Coale A. J., 1986, *Population trends and economic development*, [in:] Menken J. (ed.), *World Population and U.S. Policy: The Choices Ahead*, New York, W. W. Norton, pp. 96–104.

Davis J. D., López-Carr D., 2010, *The Effects of Migrant Remittances on Population-Environment Dynamics in Migrant Origin Areas: International Migration, Fertility and Consumption in Highland Guatemala*, Population and Environment, 32, pp. 216–237.

Eriksson M., 2000, *Reproductive freedom in the Context of International Human Rights and Humanitarian Law*, Kluwer Law International.

Esfahani H., Pesaran H., 2008, *Iranian Economy in the Twentieth Century: A Global Perspective*, Iranian Studies, 42, 2 (2009), pp. 177–211.

Freedman L., Isaacs S., 1993, *Human Rights and Reproductive choice*, Studies in Family Planning, 24, 1, pp. 18–30.

Goode W. J., 1963, *World revolution and family patterns*, Free Press of Glencoe, New York.

Greenhalgh S., 1988, *Families and Networks in Taiwan's Economic Development*, [in:] Edwin A., Greenhalgh S., Greenhalgh W. (eds.), *Contending Approaches to East Asian Development*.

Hoover E. M.,1958, *Population Growth and Economic Development in Low-Income Countries: A Case Study of India's Prospects*, Princeton, Princeton University Press.

Jafari-Mojdehi A., 2003, *Imbalance in Marriage Status in Iran [Persian]*, Journal of Social Sciences, 5, pp. 83–104.

Kearns R. A., 1993, *Place and health: towards a reformed medical geography*, The Professional Geographer, 45 (2), pp. 139–147.

Kohler H., Kohler I., 2002, *Fertility Decline in Russia in the Early and Mid 1990s: The Role of Economic Uncertainty and Labour Market Crises*, European Journal of Population, 18, pp. 233–262.

Laresn J., 2001, *Iran's Birth Rate Plummeting at Record Pace: Success Provides a Model for Other Developing Countries*, Earth Policy Institute: http://www.mnforsustain.org/iran_model_of_reducing_fertility.htm

McNicoll G., 1980, *Institutional determinants of fertility change*, Population and Development Review, 6 (3), p. 441–462.

McNicoll G., 1985, *The nature of institutional and community effects on demographic behaviour: a discussion*, [in:] Casterline J. B. (ed.), *The collection and analysis of community data*, Voorburg, International Statistical Institute, pp. 177–184.

McNicoll G., 1994, *Institutional analysis of fertility*, Population Council Working Paper, 62, New York, The Population Council.

Mahmood S. T., 1977, *Family planning: The Muslim viewpoint*, Vikas Publishing House.

Mahmoudain H., 2005, *The Increasing Age at Marriage: Examining the Protective Factors [Persian]*, Journal of Social Sciences, 24, pp. 27–53.

Malekafzali H., 2004, *Population control and Reproductive Health in the Islamic Republic of Iran*, Archives of Iranian Medicine, 7 (24), pp. 247–250.

McIntosh C., Finkle J., 1995, *The Cairo Conference on Population and Development: A New Paradigm. Population Council*, Population and Development Review, 21 (2), pp. 223–260.

Mehryar A., 1997, *Reproductive health in The Islamic Republic of Iran: Organization and Indicators*, Tehran, Institute for Research on Planning and Development.

Mehryar A., Tabibian M. et al., 1999, *Poverty in Iran: Policies and Estimates*, Institute for Research on Planning and Development, Tehran.

Merrick T., 2001, *Population and poverty: A review of reviews*, [in:] Birdsall N., Kelley A. C., Sinding S. (eds.), *Population Matters: Demographic Change, Economic Growth, and Poverty in the Developing World*, New York, Oxford University Press, pp. 201–212.

Moinifar H. S., 2007, *Religious Leaders and Family Planning in Iran*, Iran & the Caucasus, pp. 299–313.

Moghadam V., 1988, *Women, Work and Ideology in the Islamic Republic*, International Journal of Middle East Studies, 20, 2, pp. 221–243.

Moore R., 2007, *Family Planning in Iran*, 1960–1970, [in:] Robinson W. C., Ross J. A. (eds.), *In the Global Family Planning Revolution: Three Decades of Population Policies and Programs*, The World Bank Washington, DC, pp. 33–58.

Omran A. R., 1992, *Family Planning in the Legacy of Islam*, London, 40.

Price M., Lewis M., 1993, *The reinvention of cultural geography*, Annals of the Association of American Geographers, 83 (1), pp. 1–17.

Reichenbach L., 2009, *The Global Reproductive Health and Rights Agenda: Opportunities and Challenges for the Future*, [in:] Reichenbach L., Roseman J. (eds.), *Reproductive Health and Human Rights*, University of Pennsylvania, pp. 21–40.

Rutkevich, M. N., 1996, *Depopulyatsiya ili vymiranie? [Depopulation or extinction?]*, Sotsiologicheskie Issledovaniya 23 (3), pp. 104–110.

Salehi-Isfahani D., Abbasi Shavazai M. et al., 2010, *Family Planning and Fertility Decline in Rural Iran: The Impact of Rural Health Clinics*, Health Economics, 19, pp. 159–180.

Shahvazi M., Morgan S. et al., 2009, *Family Change and Continuity in Iran: Birth Control Use before First Pregnancy*, Journal of Marriage and Family, 71, pp. 1309–1324.

Sutherland E., Carr D. L., Curtis S., 2004, *Fertility and the environment in a natural resource dependent economy: Evidence from Petén*, Guatemala, Población y Salud en Mesoamérica, 2 (1), pp. 1–12.

Trewartha G. T., 1953, *A case for population geography*, Annals of the Association of American Geographers, 43 (2), pp. 71–97.

UN, 1968, Proclamation of Tehran, http://www1.umn.edu/humanrts/instree/l2ptichr.htm

UN, 1984, Report of the international Conference on Population, 1084, Mexico City, 6–14 August 1984 (New York: UN Doc E/CONF.76/19, 1984), pp. 8–40.

UN, 1999 Statement of the Islamic Republic of Iran's Delegation, ICPD+5 International Forums, the Hague, http://www.un.org/popin/icpd/icpd5/hague/iran.htm

Witte J. C., Wagner G. G., 1995, *Declining fertility in East Germany after unification: A demographic response to socioeconomic change*, Population and Development Review, 21 (2), pp. 387–397.

STUDIA OBSZARÓW WIEJSKICH
2015, volume 38, pp. 129–144
http://dx.doi.org/10.7163/SOW.38.8

KOMISJA OBSZARÓW WIEJSKICH
POLSKIE TOWARZYSTWO GEOGRAFICZNE
www.ptg.pan.pl

INSTYTUT GEOGRAFII I PRZESTRZENNEGO ZAGOSPODAROWANIA
POLSKA AKADEMIA NAUK
www.igipz.pan.pl

LOCAL DEVELOPMENT THROUGH SELF-HELP: SOME TUNISIAN CASE STUDIES

Bassem NEIFAR

UMR TELEMME
Aix-Marseille University and CNRS France,
Syfacte Laboratory,
Rue des Noisetiers 1, 44600 Saint-Nazaire, France
neifarb@yahoo.com

Abstract: Through revolting on the 14 of January 2011, Tunisians showed their rejection of the political, economic and social system. In fact, the political system was locked since their independence in 1956 and especially during the presidency of Zine El Abidine Ben Ali (1987–2011). Nevertheless, some local development systems or local populations used their entrepreneurship and have established an "anti-system" which marks their response to the system imposed by the State. Therefore, in this paper we have chosen to consider two cases of local development through self-help. The first case concerns agriculture and will be illustrated by Ghannouch, north of the town of Gabes. The second case will concern fishing and will be demonstrated in the Kerkennah islands in the Mediterranean Sea, in front of the city of Sfax. The Ghannouchis faced the narrowness of their agricultural land, and the Kerkennians faced the narrowness of their marine horizon. The Ghannouchis intensified their agriculture through jumping and land reclamation to gain new areas away from their essential space. Nevertheless, the Kerkennians remained closely linked to fishing with considerable efforts to pursue fishing campaigns in the Gulf of Gabes and away from their seas. These results are verified by field surveys and confirmed by diachronic images from Google Earth.

Key-words: Gulf of Gabes, self-development, land reclamation, mobility, fishing campaigns, Tunisian revolution, Google Earth.

Imbalances between regions and development failure

For many observers, the Tunisian revolution seemed to be unexpected and unpredictable. Yet, the first rebellion against the regime of Zine El Abidine Ben Ali, denouncing youth unemployment and lack of development, began in 2008, in the region of Gafsa (South-West). The crisis in the inland areas and rural areas was among the elements that triggered the revolution. A flashback on the development policies in the country since the country's independence in 1956 shows that the West Centre has suffered more than the other regions (Fig. 1). It has also benefited less from the dynamics experienced by the rest of the country. It is certain that the western parts of the country continued to suffer after the country regained its independence, particularly the West Centre which is the birthplace of the Tunisian revolution. However, the coast, where the largest private

and public investments concentrated in the country, has also experienced an imbalance between urban and rural areas. Before January 14 the response of different marginalized areas in the coastal or inland area to the crisis of the system differed from one region to another. Some people, in their spaces, chose self-development in industry, agriculture, and services. Others, in their localities, were more fatalistic and shut themselves away while waiting for changes coming from the outside. Nevertheless, they all protested on January 2011 to go against the regime.

While field surveys and social studies continue to be used to analyse different people's reactions from marginalized areas to cope with the inevitable, the geographers produce and analyse maps of these areas, interpret field studies, and find many arguments to explain the dynamics of people in connection with their spaces. Nowadays, changes and new arguments come with the Internet and with Google Earth[1]. Google Earth offers the facility of geographical measurements. It also offers the verification of some actions on the ground by reviewing and comparing satellite images from different periods. We will experiment with this tool for approving our fieldwork and to increase its scientific dimension.

This article seeks to understand:

- How regional communities in Tunisia which suffer from a difficult and hostile environment and lack of support from the State or regional authorities (example of Kerkennah Islands and the city of Ghannouch) are often forced to develop their own development strategies?

Failure of planning policies

An inherited planning crisis

Since the early years after the country regained its independence there has been a development policy aimed at reducing the former colonial imbalance between the North and the South, especially between Tunis and other regions, but also between the coast and the interior.

The national planning policy has been marked by three phases (Daoud 2011):

- The first, with the report of Eight (D.A.T. Groupe Huit), is considered the first master plan of the country, entitled 'Cities and Development', and was presented in 1973 and covered the period 1956–1985. This master plan aimed to make a planning policy and affirmation of the nation-state.
- The second, considered the first official National Land-use Planning Strategy (SNAT) for the period 1985–1996, was aimed at improving the regional balance (DGAT 1985).
- The third (SDAT), 1996–2011 (Fig. 2), aimed for metropolisation and coastal development, and involved increasing the weight of the coast at the expense of the inner regions which were the cradle of the revolution. This plan considered that inland areas were fragile and required protection against overpopulation (Dirasset--Groupe Huit-IGIP, 1997).

[1] Since version 5.

Fig. 1. Map of the Tunisia Governorates
Source: www.nationsonline.org

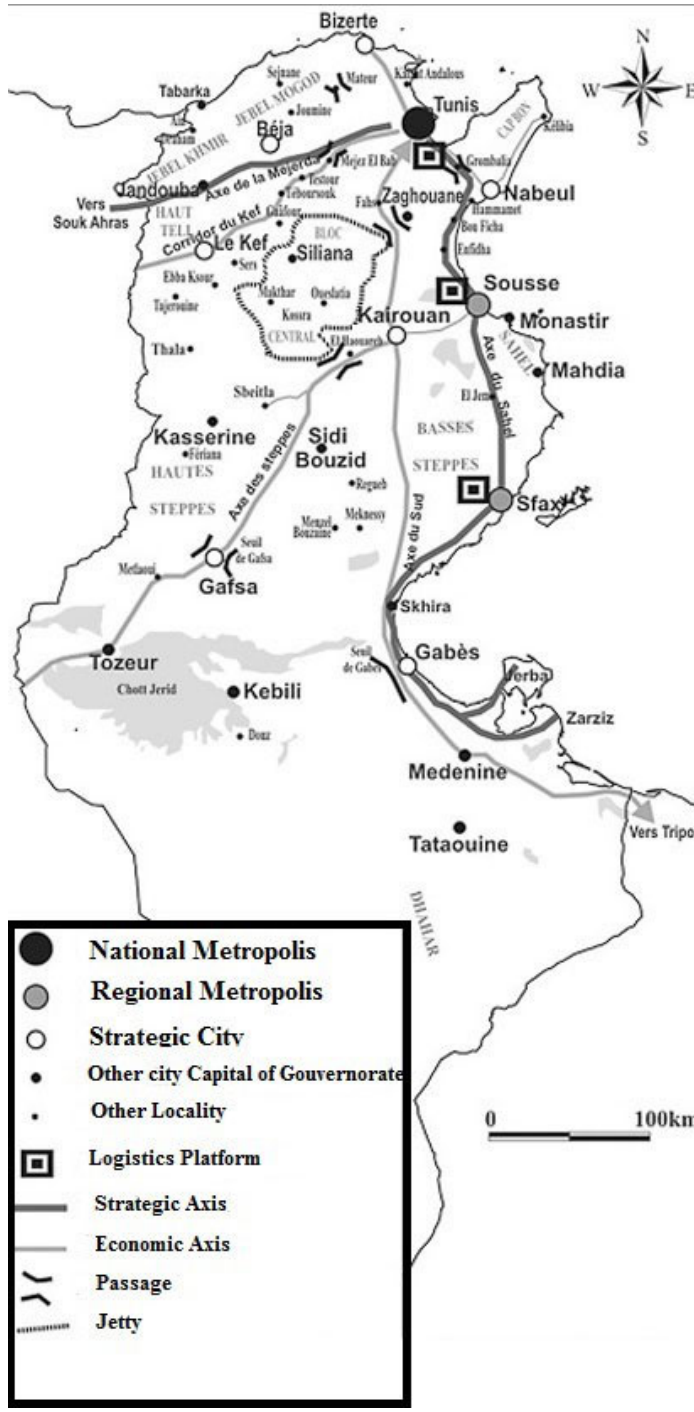


Fig. 2. Metropolisation in the 1999–2011 SDAT Master Plan
Source: Republic of Tunisia, Ministry of Environment and Spatial Planning, 1996.

The third master plan stood out radically against the previous ones. It assumed that coastal regions are more ready for globalization than the interior regions which are considered brittle (MEAT 1996, 1997). The tradition of knowhow inherited from century to century, like textiles in the Sahel and the manufacturing industries in Sfax, explains this vision of planning (Neifar 2004). Nevertheless, this master plan emphasized the crisis of interior regions, especially their marginalization, unemployment, and lack of opportunities, in addition to unfavourable climatic and soil conditions.

Failure of the regional economic planning

During four decades and parallel with different master plans many actions and projects were undertaken by the Government to reduce the development gap between the North, South, East and the West, especially during the cooperative period (1961–1969) (Ruf 1975). Since 1960 the State has tried to reduce the inherited imbalance between the Tunis and other regions, and between coastal regions and mainland. The Tunisian government wanted to stimulate dynamics in the interior regions and in the South, therefore, it created many poles of development. The State formed regionalised poles in different regions of the country. Thus, since the 1960s, it has implanted industrial units, such as the steel complex of Menzel Bourguiba (North-East), the paper pulp plant of Kasserine (Centre-West), the textile complex of Ksar Hellal (Center-East), the sugar factory of Beja (North-West), cement plants in several cities, the acquisition of NPK in Sfax by the State-(Centre-East), and construction of the commercial port and Maghrebi chemical industry in Gabes (South-East) between 1969 and the early 1980s. On the other hand, in 1959, the government commenced to develop tourism sector in the coastal areas of Hammamet, Nabeul, Sousse, Monastir, Djerba, and Zarzis.

This policy resulted in that the industry and tourism have been privileged by the State at the expense of the agricultural sector which remained on the side-lines of investments. Indeed, agriculture was supposed to produce products at affordable prices for the working class and for the urban population. Nevertheless, the poles of development launched by the State have become the only growth poles. The glaring imbalance remained (Dhaher 2010) between the coast and the interior regions, but also between the cities and the rural areas.

The various International Monetary Fund (IMF) programs (Structural Adjustment Programme SAP 1986 and Competitiveness Programme in 1995), the development aids and loans imposed to the Government a severe disengagement from economic investments. The State became only responsible for basic infrastructure such as roads, hospitals, education, etc. Coastal and tourist areas have benefited from most infrastructures that came from public and private investments at the expense of inland areas and the rural areas. Apart from planning problems, the policy of compulsory and free education for all citizens led by the government after the independence has resulted in an unprecedented number of highly skilled unemployed individuals. State disengagement from the economic investment has increased the problem of youth unemployment in the country.

Diagnosis of the crisis

Unemployment became structural. It is associated with the demographic composition, which means that the number of unemployed youth in working age remains important. Unemployment is also directly linked to economic growth, which was around 5% before

the revolution. In 2010, the unemployment rate reached 14% (official statistics)[2], while according to the informal statistics 25% of people in working age were unemployed. In 2013, this percentage reached 16%. The corruption cases in the presidential family, some of them disclosed in the internet and in social networks, have aroused a sense of injustice and revolt among the citizens. The crisis in Tunisia was exacerbated by choking and locking the political life[3], lack of respect for human rights and for human dignity. This situation has lasted for more than fifty years.

Self-help: a response to the crisis

With the disengagement of the State people from certain localities chose migration or immigration. Others went to work and sought solutions in their own place highlighting expertise and knowhow rooted in their culture. Some economists evoked endogenous development (Courlet and Pecqueur 1996) while scientists in regional studies evoked the development "from below" (Stöhr 1981). The localities that demonstrated this development were even classified as a development model, called "localized productive system" LPS (Courlet and Pecqueur 1996). Gagnon (2002) and Theys (2002) , identified this action as Sustainable Territorial Development (STD). For us, while accepting the terms already presented, we believe it would be appropriate to qualify the action of these localities, as "Self-Help". It is the development by using the full potential of cultural, natural, and economic resources of a locality in order to overcome difficulties and to establish socio--economic prosperity.

Several regions in the coastal cities of Tunisia (Northeast, Centre-East and Southeast) invested in industrial sectors like textile in Sahel, manufacturing industries in Sfax, and tourism in Sousse, Hammamet, and Djerba. They realized early, that the State, very centralised as it was, would not come to their rescue. They have used their knowhow and their work to defy the fate. But some other people chose to migrate to Tunis as it was the case of the inhabitants of Ouedref and Métouia in the governorate of Gabes. Inhabitants of other localities headed for Europe, like those of Ghomrassen in the Governorate of Tataouine (South west), of Msaken (governorate of Sousse), and of Mahares (Governorate of Sfax), etc. (Neifar 2004)

The study of Ghannouchis and Kerkennians was motivated by the fact that despite the hostility of the natural environment, and unlike other communities, the remaining inhabitants in these two areas have adapted the environment in which they lived to their needs. They did not hesitate to move for one or many days to operate in other areas sometimes hundreds of kilometers from their home.

[2] To meet the requirements of international agencies and funds and to give a rather positive picture of economic growth in the country, the regime of President Ben Ali has not hesitated to manipulate the methods of calculating unemployment rate in the countrie.

[3] Leaders of political parties are persecuted by the regime, everywhere, in Tunisia or in foreign countries. In fact, only the opposition parties, close to the regime are authorized to hold meetings and activities. Like the economy, politics becomes in Tunisia a family affair.

Ghannouch, the agriculture or the determination of Man towards nature:

Ghannouch with 22,681 inhabitants in 2004[4] (National Institute of Statistics, INS) is a coastal delegation which belongs to the governorate of Gabes. This delegation is an ancient oasis. The urban sprawl has consumed over the years the old oasis located north of the delegation and separated the city from the sea (Neifar 2004).

A) The narrowness of the agricultural horizon

The rapid urbanization and degradation of the ancient oasis have reduced the amount of exploitable farmland in Ghannouch. On the other hand, the commercial port and the Maghrebi chemical industry in Gabes limit any extension to the south, while the Mediterranean Sea to the east, the national road and the city of Metouia to the west, and a series of lagoons and wet areas to the north. Despite this, Ghannouchis, known as strenuous farmers, have used the wet areas in order to gain new lands for their agriculture (Neifar 2004).

B) The land reclamation to the detriment of wetland areas

This strategy was developed by Ghannouchis since 1990 (Neifar 2004, 2011). It covered the wet areas owned by the State, located north of the delegation of Ghannouch. The land reclamation and improvement consists in removing halophytic vegetation[5], tilling the land with animals to prevent soil compaction and mixing earth with the beach sand and animal manure.

Reclaimed land extends along the coast to more than five kilometers from the centre of Ghannouch (Neifar 2004, 2011). The newly reclaimed plots are usually planted with

Photo 1. Traditional method of land reclamation used by Ghannouchis (by the author, 2002)

[4] The population census of 2004 is still now the last official census while, the census of 2014 is not yet published.

[5] Plants tolerating salinity.

Photo 2. Wet and reclaimed areas in Ghannouch in March 2002 (by the author)

onions, carrots, alfalfa. Though this is public land, many Ghannouchis have used and worked this land illegally for a few years before selling the right of use and operating to another Ghannouchi.

C) Appropriation of lands
Ghannouchis have developed this technique since the 1990s (Neifar 2004) in various localities and in neighbouring localities in the governorate of Gabes. They reach up to forty kilometers from the city of Skhira in the south of governorate of Sfax. In recent years the trend is to make profit with land reclamation in the north of Ghannouch, and after many years the income is used to buy land with a property title in other localities. Indeed, Ghannouchis reclaim land in wet areas and operate it for a few years before selling the right to use the land to another farmer.

Fishing or the struggle for survival of Kerkennians

A) The narrowness of the marine and terrestrial horizon on the Island
Kerkennah is an archipelago consisting of two main islands with an area of 160 km². The archipelago is commonly called the Kerkennah islands. The population of the islands has stagnated over the last fifty years at around 14,400 people (INS 2004). For decades the islanders have migrated to the Mainland, particularly to Sfax and Tunis. Those Kerkennians who do not migrate live mainly of fishing. Despite a certain slowdown the coastal fishery continues to be the leading employment sector on the island. In Kerkennah, people from villages like Mellita, El Attaya, and El Kraten devote themselves entirely to this sector. In 2000, according to the official statistics of the Tunisian National Board of Fisheries ONP (Neifar 2004), there were 4460 fishermen in Kerkennah islands, i.e. nearly 30% of their total population. Tourism, which is a very marginal activity, involved only 240 people in 1999 (Neifar 2004), while agriculture is almost absent due to the lack of arable land.

B) The mobility for following fishing seasons

Kerkennians cannot rely on their nearest sea waters, i.e. the shallow sea which is not rich in fish, so they move away to other marine areas looking for shrimp. Each year in April with the end of the octopus season[6] the fishermen from Kerkennah concentrate their efforts on shrimp fishing on the coast of their islands. They move successively to the south, in the Gulf of Gabes, in front of the coast of Skhira, and then those of the Gabes region finally arrive off the island of Djerba, especially in "Esseguia"[7] (Fig. 3), which is approximately 120 kilometers from their shores.

Fig. 3. "Esseguia" is formed by two natural shelters dominated by an advancing sandy spit that divides the two shelters into two opposite points of embarkation (Google Earth 2013)

Photo 3. Djerba "Esseguia"in May 2002 (by the author)

[6] The octopus fishing begins in August of each year and ends in April.

[7] Esseguia is a natural harbour, on the eastern coast of Djerba in front of huts that became later the Club Med, launched by its owner Gilbert Trigano, in 1954, (Neifar 2005).

We obtained this confirmation in May 2002 during the shrimp fishery season on the Djerba island. At that time, we counted 26 boats that belonged to Kerkennians, of a total of 46 present to this day in "Esseguia" (Photo 3).

In March 2003 we returned to "Esseguia" on Djerba island and we only found three Djerbian fishers on-site who prepare their boats for the next season and we didn't find any fishermen from Kerkennah. The absence of Kerkennian fishermen is explained by the fact that the season normally starts in May.

New technologies for proving the local dynamics

Google Earth: a tool that reflects the liveliness of Ghannouchis

The informal nature of this agriculture does not allow obtaining official statistics concerning the surface area of the lands reclaimed. Neifar (2004) said that around 600 ha were reclaimed by Ghannouchis. Today, with the free access to satellite images, we used Google Earth Pro to measure the areas acquired over approximately two decades by Ghannouchi at the expense of the lagoon areas and the coastal dunes (Fig. 4).The measurements carried out have enabled us to find that currently there are approximately 1,116 ha in this area that officially belongs to the State; however, this land is unofficially under the control of farmers from Ghannouch.

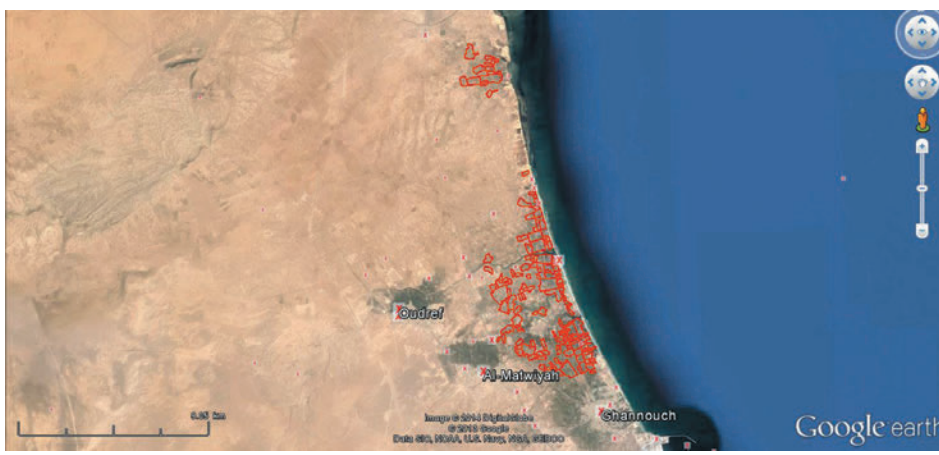


Fig. 4. Measuring the areas acquired unofficially by farmers from Ghannouch, Google Earth Pro

After the revolution, the as a result of pressure put by people of Ghannouch on the transitional government to hire the unemployed youth in the commercial port and the Maghrebi chemical industry in Gabes hundreds of people were employed. Consequently, some reclaimed land areas were abandoned by the unemployed youth for the benefit of a job in the chemical group. Qualitative fieldwork conducted in April 2013 showed that young people preferred to work in a stable structure like the chemical group because it was better than working on land owned by the State, (public land) that might be taken by the authorities any time. After the revolution, in 2011, the unemployment rate in Ghan-

nouche was the lowest in the whole Governorate of Gabes with only 5.4% against 18.1% for the entire Governorate[8].

The comparison of Google Earth images using the application "historical imagery", between January 2004 (Fig. 5) and March 2013 (Fig. 6) shows the land abandoned which was already reclaimed by Ghannouchis and a decline in planting surfaces in the same area. This is related to the jobs found in the chemical group, but also to the soil degradation after the land reclamation. Nevertheless, we did not find any statistics on land abandonment by the youth who found employment in the chemical group of Gabes.

Fig. 5. Google Earth 2004

Fig. 6. A decline of planted surfaces in 2013 compared to 2004, observed from Google Earth images history. Google Earth 2013

[8] Governorate of Gabes in numbers, ODS 2011.

Google Earth: the mobility of Kerkennians

We noticed the mobility of fishermen, Kerkennians, when we conducted fieldwork throughout the Gulf of Gabes. To verify and confirm this fact we used Google Earth and its extension, "historical imagery", to review a succession of satellite images of Esseguia in Djerba during the shrimp season between April and June. Available images that coincide with the period of the shrimp campaign could be found between May 2008 and May 2010.

Fig. 7. Google Earth May 2008

Fig. 8. Google Earth May 2010

The analysis of Esseguia's images shows and confirms the continuity of the presence of the Kerkennian fishers during the shrimp campaign. This observation was already checked during field surveys conducted between 2002 and 2013. Nevertheless, the situation has changed after the revolution of 14 January 2011.

After the revolution, Kerkennians continue to follow fishing campaigns and especially shrimps in the Gulf of Gabes. All of a sudden, during the 2013 campaign, Kerkennian fishermen were prevented from fishing for shrimp around from Djerba coast by fishermen from Djerba. Indeed, in May 2013, nearly 300 boats were returned from Djerba (see Tunisian newspaper "Le Temps" May 15, 2013). Until June 2013, Kerkennian fishermen had not reach an agreement with the authorities to cope with their fishing ban imposed by the Djerbian fishermen.

With a limited continental horizon and a maritime horizon increasingly restricted by pollution and by opposition from fishermen from other regions, Kerkennah remains a marginalized archipelago. Nevertheless, Kerkennians who wish to stay on the island continue to fish. Recent statistics[9] on the number of fishermen in Kerkennah show 6915 fishermen in 2011 against the total population of 14,497, or 47% of the total population of Kerkennah. The statistics show also that Kerkennians make 49% of the total number of fishermen in the governorate of Sfax.

Photo 4. Absence of Kerkennians in "Esseguia" on the Djerba Island in May 2013 (by the author)

[9] Estimation of the General Commission for Regional Development (CGDR) 2012.

Photo 5. Kerkennians in Djerba "Esseguia" during fishing campaigns. Anonymous photo from the Internet

Conclusion and discussion

In terms of scientific input this study shows the dynamics of local communities in Tunisia. Indeed, despite the difficult and hazardous natural environment, lack of interest and support on the part of State or regional authorities, these communities in Ghannouch and on Kerkennah islands are often forced to develop their own development strategies. Their dynamics are drawn from their cultures and from their knowhow. They use all their potentials to adapt their environment to their need. The situation could change in the coming years and the role of the State and local authorities may become closer to the people's aspirations. Indeed, the members of the Constituent Assembly have finished writing the country's new constitution. The new constitution gives priority to decentralization. Article 128 refers to a new division of the territory based on municipalities, regions, and departments. As it is mentioned in the new constitution, the financial and decision-making autonomy will bring benefit to marginalized areas of the country. Indeed, spaces marginalized for decades will no longer wait for a central decision from the capital. The locally elected officials will be able to effectively decide about the future of their territories and contribute to their development. Indeed, the election of all members of various local councils can render the decision-making process loyal to local spaces and not to the central government. This could enhance the efficiency of the development of marginalized areas and spaces situated far from the capital Tunis. Nevertheless, planning must be coordinated and must take into account the realities, dynamics and local aspirations.

On the other hand, this study has been supported by one tool that is accessible for all, namely Google Earth, in its free and paid version. It confirms the findings made during

the investigation work and during the years of observation and confirms the socio-spatial changes in the Gulf of Gabes. With Google Earth Pro we measured the areas acquired by Ghannouchis at the expense of the lagoon areas and at the expense of coastal dunes. We have found that these areas currently amount to 1,116 hectares. The ownership of this land lies with the State. The surface area of new extensions of 1,116 ha is largely outside the perimeter of the delegation which is about 1900 ha[10]. It demonstrates the importance of these extensions which represent 57% of the total area of Ghannouche. Yet, in terms of sustainable development these extensions show an intensification of agriculture which leads to the deterioration of the land quality and land abandonment (Neifar 2004).

The "historical imagery" tool of Google Earth seems to be helpful for the geographers, especially in respect of the diachronic images. Indeed, any changes may be quickly observed in the field and many geographic arguments could easily be confirmed with the visualization of different images from Google Images History. Nevertheless, the resolution and image quality available, including historical images, can be a barrier to a more specific geographical research. This adds to the inadequacy of available periods of scientific studies and work goals. For example, for our study on the mobility of the Kerkennian fishermen in Esseguia Djerba we have found that the last image of Google Earth was of May 2010 and no more images for the month of May were available. Especially, as it is during this month that Kerkennian fishermen are fishing for shrimp in Djerba Esseguia.

Eventually, the case of Kerkennah and Ghannouch in Tunisia are not isolated in the Maghreb regions and in the south of the Mediterranean Sea. Actually, several areas are known for their strong personalities and their populations do not hesitate to undertake actions, to make changes on the territory and to challenge hazardous natural environment conditions. They are all the time looking for new spaces that could satisfy their desires. For some traders and gifted artisans this was the case of Mozabites in Algeria and Afassians in Morocco. In Senegal, the Diola farmers in Casamance produce a value in the rice paddies similar to the Chinese rural areas. Hence, it is important to study these different areas in order to make a comparison and address the key similarities and differences. This would allow the elected decision-makers to better understand the potential of each region, so that all interventions, including international organizations, can best meet local aspirations.

References

Courlet C., Pecqueur B., 1996, *Districts industriels, systèmes productifs localisés et développement* [in:] Courlet C., Abdelmalki L. (eds.), *Les nouvelles logiques de développement*, Editions l'Harmattan, Paris, pp. 91–102.

Daoud A., 2011, *La révolution tunisienne de janvier 2011: une lecture par les déséquilibres du territoire*, EchoGéo [En ligne], Sur le Vif, mis en ligne le 23 septembre 2011, http://echogeo.revues.org/12612.

Dhaher N., 2010, *L'aménagement du territoire tunisien: 50 ans de politiques à l'épreuve de la mondialisation*, EchoGéo[En ligne], numéro 13|2010, mis en ligne le 20 septembre 2010, http://echogeo.revues.org/12055

[10] Office of development of the South ODS 2011.

Dirasset-Groupe Huit-IGIP, 1997, Schéma Directeur d'Aménagement du Territoire National, résumé recommandations et conclusions. 23 pages.

Direction Générale de l'Aménagement du Territoire (D.G.A.T) Tunisie, 1985, Schéma National et Schéma régionaux d'Aménagement du Territoire et Atlas.

Gagnon C., 2002, *Modèle de suivi des incidences sociales, évaluation environnementale et développement régional viable, Rapport de recherche*, Chicoutimi, GRIR éditeur / Université du Québec à Chicoutimi, 163 p. Disponible en ligne: www.uqac.ca/msiaa

http://books.openedition.org/iremam/100

Ministère de l'Environnement et de l'Aménagement du Territoire (M.E.A.T) Tunisie, 1996 et 1997, Schéma National d'Aménagement du Territoire. Rapports de première et deuxième phase.

Neifar B., 2004, *Littoralisation et aménagement de l'espace : les modèles socio-spatiaux du Golfe de Gabès (Tunisie)*, Thèse de doctorat de l'université d'Aix-Marseille I.

Neifar B., 2005, *Jerba: les mutations récentes d'un système insulaire*, Revue Mappemonde, 77.

Neifar B., 2011, *Vers une nouvelle Géographie du Golfe de Gabès en Tunisie: étude géographique d'un espace méditerranéen*, Editions Universitaires européennes.

Ruf K. W., 1975, *Le socialisme tunisien: conséquences d'une expérience avortée, [in:] Introduction à l'Afrique du Nord contemporaine*, Nouvelle édition. DIR. CRESM, Institut de recherches et d'études sur le monde arabe et musulman, Aix en Provence, pp. 399–411.

Stöhr W. B., Taylor F., 1981, *Development from above or below*, John Wiley, Toronto.

Theys J., 2002, *L'approche territoriale du développement durable, condition d'une prise en compte de sa dimension sociale. Développement Durable and Territoires*, Disponible en ligne http://www.revue-ddt.org/dossier001/D001_A05.htm, DOI : 10.4000/developpementdurable.1475

Sources:

Governorate of Gabes in Numbers, Office of development of the South ODS 2011.

Governorate of Gabes in Numbers, Office of development of the South ODS 2012.

Governorate of Sfax in Numbers, General Commission for Regional Development CGDR 2012.

I.N.S., 1994, General Census of Population and Housing.

I.N.S., 2004, General Census of Population and Housing.

STUDIA OBSZARÓW WIEJSKICH
2015, volume 38, pp. 145–164
http://dx.doi.org/10.7163/SOW.38.9

KOMISJA OBSZARÓW WIEJSKICH
POLSKIE TOWARZYSTWO GEOGRAFICZNE
www.ptg.pan.pl

INSTYTUT GEOGRAFII I PRZESTRZENNEGO ZAGOSPODAROWANIA
POLSKA AKADEMIA NAUK
www.igipz.pan.pl

ASSESSING URBAN SPRAWL-RELATED HOUSING DYNAMICS IN THE ROMANIAN METROPOLITAN AREAS

Ines GRIGORESCU[1] • Bianca MITRICĂ[2] • Irena MOCANU[2]

Institute of Geography, Romanian Academy,
[1]Environment and GIS Department • [2] Human Geography and Regional Development Department
12 Dimitrie Racoviţă Street, sector 2, Bucharest, RO-023993, Romania
inesgrigorescu@yahoo.com • biancadumitrescu78@yahoo.com • mocanitai@yahoo.com

Abstract: Currently, in Romania, nearly 7,500,000 inhabitants (34% of the country total population) live in the metropolitan areas. Following the political and socio-economic changes which came after the post-communist period, the metropolitan landscape witnessed significant transformations, mainly related to urban sprawl (suburbanisation), in terms of land use/land cover changes and conversion to residential, commercial or services areas triggering both deconcentration and spatial redistribution of the population. The authors intend to assess the main urban sprawl-related housing dynamics in connection with some triggering driving forces in terms of the spatial transformations of built-up areas, changes in population patterns, residential expansion, etc., while focusing on the most important Romanian metropolitan areas: Bucharest, Oradea, Iaşi and Constanţa. Therefore, using GIS computer mapping techniques, statistical data and field surveys, the current study seeks to provide an insight into the connections between the main patterns of change and the residential development pathways in the Romanian metropolitan areas.

Key-words: urban sprawl, suburbanisation, GIS, housing, metropolitan areas, Romania.

Introduction

The first decade of the 21st century brings about the most extensive urbanisation share ever reached with more than half of the world's population living in the urban areas. In Europe alone over 70% of the population live in the urban areas - a number likely to increase to 84% by 2050 (Kabisch and Haase 2011). Moreover, most of the European countries have faced the increasingly extensive transformation of the urban shape and development patterns (Patacchini et al. 2009) through suburbanisation and densification processes (ESPON FOCI 2010).

The classic cyclical urbanisation model built by Van den Berg et al. (1982) is broadly accepted as a pattern of the past and present population changes in both urban cores and surrounding fringe areas, thus triggering both urban growth and decline periods in Europe in four stages: urbanisation, suburbanisation, desurbanisation and reurbanisation. Next, each stage is divided into two periods of population increase (centralisation) or decrease (decentralisation) (Bayona and Gil-Alonso 2011).

The first stage, i.e. urbanisation, is characterised by a concentration of population in the core city compared to the surrounding region, while the following phase, i.e. suburbanisation, leads to a strong process of deconcentration of both population and economic activities from the core areas towards the periphery. Suburbanisation sometimes turns into counterurbanisation based on the population shifts from the urban periphery towards the small and medium-sized towns of less urbanized metropolitan surroundings. During this process the core areas lose more people and jobs than the suburbs gain. Even though at the suburbanisation stage the urban area, in general, still shows positive growth, it shifts to a negative trend at the following phase, desurbanisation, when population starts declining both in core cities and fringe areas. Reurbanisation is triggered by the revitalisation of inner cities, a process specific to the West-European urban areas. Over the past twenty years, suburbanisation has become the leading process in Southern and Eastern Europe (ESPON FOCI 2010; Grigorescu et al. 2012b).

In most post-communist Central and East-European metropolitan areas the urban sprawl has been understood as a process of urban development triggering population deconcentration and territorial transformations related to the restructuring of the physical shape, land-use patterns and socio-spatial configuration (Sykora and Ourednicek 2007; Leetmaa 2008). Furthermore, suburbanisation becomes an important issue due to the rapid changes related to the commercial and residential expansion experienced by the former compact socialist cities through non-contiguous, leap-frog suburban sprawl with negative economic, social and environmental consequences (Sykora and Ourednicek 2007).

The urban sprawl, mainly the suburbanisation process, has become present in the Romanian towns subsequent to the fall of communism. Up-to-date investigations the urban sprawl phenomenon carried out in Romania underlined a strong connection with its driving factors of change (natural, socio-political, economic) and the related environmental consequences (Nicolae 2002; Bălteanu and Grigorescu 2006; Grigorescu 2008; Suditu 2009; Ianoş et al. 2010; Grigorescu and Dumitrescu 2010, Grigorescu et al. 2012a etc.). Moreover, studies on urban sprawl-related issues, dealing mainly with its major characteristics and typologies (Suditu et al. 2010), legal tools and territorial planning (Suditu 2012) residential development and real-estate market dynamics (Conway et al. 1995; Niculiţă et al. 2011; Zilişteanu 2011), land cover/land use changes and related environmental impacts (Pătroescu et al. 2011; Iojă et al. 2011; Grigorescu et al. 2012b), counter-urbanisation process and rural-urban fringe patterns (Guran-Nica and Sofer 2011), metropolization process (Erdeli and Simion 2006) etc., were undertaken, regarding Bucharest Metropolitan Area or other Romanian metropolitan systems.

The current research is aiming to relate the specific patterns of urban sprawl (mainly suburbanisation) and housing dynamics in the post-communist period, a time frame which triggered significant transformations, especially at the urban-rural interface. The authors are trying to highlight the impacts of environmental and socio-economic patterns of urban sprawl in the Romanian metropolitan areas by means of some relevant statistical and spatial indicators in order to trace the main residential development pathways and their projection on housing dynamics and patterns.

Methods and data

In view of the above, specific spatial and statistical data were used in order to assess the urban sprawl-related patterns of the Romanian metropolitan areas with focus on selected case-studies (Bucharest, Oradea, Iaşi and Constanţa). Thus, spatial data (GIS processing of maps at different spatial and temporal scales after the fall of the communist regime when the urban sprawl process, mainly suburbanisation, come into force), statistical data (supplied by the National Institute of Statistics for the 1991–2012 time frame) were used and field surveys were carried out. The spatial data (topographic maps, 1990; EEA Corine Land Cover 2006) were used in order to understand and picture the territorial dynamics of suburbanisation, as well as the connections between the environmental driving forces and the main patterns of change (Grigorescu et al. 2012a). In addition, relevant statistical data were processed (e.g. population growth, finished dwellings, built-up areas, dwelling units density) in order to provide comprehensive information on the housing dynamics in the Romanian Metropolitan Areas focusing on the selected case-studies.

Urban sprawl in the Romanian metropolitan areas

Currently, over 11,000,000 inhabitants (55% of Romania total population) live in the urban areas, out of which almost 7,500,000 (34%) live in the metropolitan structures. In the political and socio-economical context of the post-communist period, the dynamics of urban population marked the emergence of the urban sprawl phenomenon in Romania (Grigorescu et al. 2012a). In the Romanian geographical literature the metropolitan areas are defined as "spaces under the influence of urban centres that have macro-regional functions and whose population exceeds 1 million people" (Erdeli et al. 1999) and only one metropolitan area (Bucharest) falls into this category. Given that the rest of Romanian towns have less than 400,000 inhabitants each and polarise spaces under 1 million inhabitants, the metropolitan development was supported by some legal instruments according to which a metropolitan area is to be established based on the joint association of the administrative-territorial structures (Grigorescu et al. 2012a). Thus, the Intercomunitary Development Associations were established as cooperation structures intended to jointly address the development projects at local and regional level. Amongst 600 partnerships recognized by 2012, 19 were established around large and medium-sized towns as an example of metropolitan associative structures (STDR 2015) of which 9 are a part of the Federation of Romanian Metropolitan Areas and Urban Agglomerations – FZMAUR (Bacău, Baia Mare, Braşov, Constanţa, Cluj, Iaşi, Oradea, Târgu Mureş şi Timişoara)[1].

In addition to this, in order to carry out priority investments under the programmes funded from the Community and national budget, according to Government Decision no. 998/2008, seven national growth poles and 13 national development poles were also designated in Romania (Fig. 1)

At the European Union level, in accordance with the EUROSTAT provisions, metropolitan regions are classified as NUTS3 regions or a combination of NUTS3 regions (County in Romania) which represent agglomerations with over 250,000 inhabitants. The same Eu-

[1] http://www.fzmaur.ro

ropean Union data source classifies metropolitan regions in three main categories totalling 8 such structures: capital metro regions (Bucharest/Ilfov County), second-tier metro regions (Cluj-Napoca/Cluj County, Timişoara/Timiş County, Craiova/Dolj County, Constanţa/Constanţa County, Iaşi/Iaşi County) and smaller metro regions (Galaţi/Galaţi County and Braşov/Braşov County)[2].

Moreover, in line with the project document regarding the Strategy for Territorial Development of Romania 2035 the spatial entities scheduled to play a major role in the Romanian urban system are foreseen to be developed: *metropolitan poles with international potential* (Bucharest, Timişoara, Iaşi and Constanţa), *metropolitan poles with superregional/interregional potential* (Braşov, Cluj-Napoca, Craiova, Oradea, Ploieşti and Galaţi-Brăila), *poles with regional potential* (Arad, Suceava, Râmnicu Vâlcea, Sibiu etc.), *poles with limited regional potential* (Tulcea, Bacău, Vaslui, Călăraşi etc.), *sub-regional poles with urban functional zone potential*, *urban poles with zonal influence*, *urban poles with local influence* and *towns in the vicinity of metropolitan poles*[3].

Currently, in Romania, there are 22 towns aiming to develop metropolitan areas, out of which only one – Bucharest – (*very large city*, according to the classification of towns) meets the requirements of such a structure according to both international and Romanian legislation (Geografia României 1984; Urucu et al. 2006; Mitrică et al. 2014). The rest of 21 towns attempted to develop metropolitan areas based on the legislative context which supports metropolitan development by the association of the administrative units under the influence of a city rather than by the size of the polarising city (Table 1, Fig. 1) (Grigorescu and Dumitrescu 2010; Grigorescu et al. 2012a). Thus, the population living in metropolitan structures is totalising nearly 7,500,000 (34%) inhabitants, out of which over 2,500,000 (11.5%) in Bucharest Metropolitan Area.

Given that the fall of the communism brought about significant socio-economic changes followed by urban restructuring and spatial transformations which mainly affected the capital-city and some of the large cities, the authors intend to address the suburbanisation-related issues while focusing on Bucharest, Oradea, Iaşi and Constanţa Metropolitan Areas.

Bucharest is the only city which meets the requirements of metropolitan area in terms of size and dynamics. However, the city and its surrounding territory do not have the functionality of an independent metropolitan administrative structure as Oradea, Iaşi and Constanţa do. Consequently, over the last years, several attempts to delineate its metropolitan area through scientific (Iordan 1998; Ianoş et al. 1998–1999; Iordan 2003; Săgeată 2005; Ianoş et al. 2012 etc.) or political-oriented (Gherasim 2003; Săgeată 2006) approaches have been made.

Currently, *Bucharest Metropolitan Area* acts as an urban-rural structure organised into one core city (Bucharest) and around 100 administrative units (LAU2 level) pertaining to Ilfov (40), Giurgiu (24), Călăraşi (29), Dâmboviţa (5) and Ialomiţa (2) Counties, gathering over 2,500,000 inhabitants. It is located in the south-eastern part of Romania and overlaps with the Romanian Plain also known as the Lower Danube Plain (Bălteanu et al. 2006) which has always been a predominantly agricultural rural space with over 70% of arable land. Due to these environmental conditions which add to the political and socio-economic factors the area had faced over time major transformations from arable to residential oriented land use.

[2] http://epp.eurostat.ec.europa.eu/portal/page/portal/region_cities/metropolitan_region

[3] www.sdtr.ro

Table 1. Towns/metropolitan areas in Romania grouped by demographic size

Town group/inh.	No. of towns in 2012	Towns which have become functional and prospective metropolitan areas
Total towns of which:	320	22
Small towns (total) with	**215**	
under 5,000	20	
5,000–10,000	98	
10,000–20,000	96	
Medium-sized towns (total) with:	**81**	**5**
20,000–50,000	59	1 (Simeria)
50,000–100,000	22	4 (Deva, Hunedoara, Râmnicu Vâlcea, Sibiu)
Large cities (total) with:	**23**	**16**
100,000–150,000	9	4 (Baia Mare, Suceava, Târgu Mureş, Satu Mare)
150,000–200,000	4	2 (Bacău, Piteşti)
200,000–300,000	5	5 (Brăila, Braşov, Galaţi, Ploieşti, Oradea)
300,000–400,000	5	5 (Cluj-Napoca, Constanţa, Craiova, Iaşi, Timişoara)
Very large cities:	**1**	**1**
Over one million	1	1 (Bucureşti)

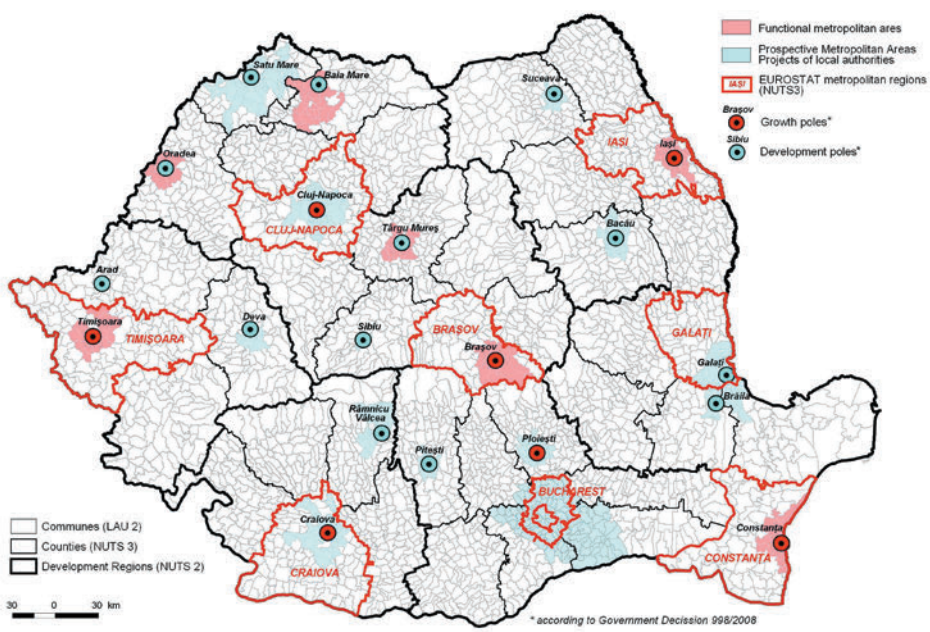


Fig. 1. Metropolitan development in Romania

Oradea Metropolitan Area is located in the north-western part of Romania adjacent to the border with Hungary. It consists of 8 localities[4] with a population exceeding 240,000 inhabiting the administrative territory of 62.1 ha. The area is spreads between Crişana Hills and Crişana Plain, with certain disparities in terms of urban residential sprawl; the plain landscape in the western part with the lakes and rivers (Crişul Repede, Peţea) is much more preferred than the hilly relief found in the eastern part despite its vegetation cover.

Iaşi Metropolitan Area is located in the north-eastern part of Romania adjacent to the border with the Republic of Moldova. It includes the town of Iaşi and 13 surrounding villages[5] spanning over an area of 787.87 sq.km, with a population exceeding 400,000 inhabitants. The area overlaps with a hilly stretch with lower elevation in the north – Jijia--Bahlui Plain (100–150 m altitude) whence it rises up to 300–350 m altitude in the Central Moldavian Plateau separated by a monocline structure with cuesta alignments (Coasta Iaşiului nearly 100 km long) (Bălteanu et al. 2006). Thus, lower altitudes, dense network of rivers (Bahlui, Nicolina) and lakes (e.g. Veneţia, Rediu), as well as a large spread of vegetation favoured urban sprawl and residential development mainly in the southern and north-eastern parts (Grigorescu et al. 2012a).

Constanţa Metropolitan Area embraces the most important urban system composed of Constanţa Municipality and 14 surrounding localities[6] with about 450,000 inhabitants in the Romanian Black Sea area. The area is overlapping with the eastern part of the South-Dobrogea Plateau (150–200 m altitude) with flat plateau-like interfluves and with the Romanian Black Sea Coast with 10–35 m high cliffs (Bălteanu et al. 2006). Abandoned land (mostly agricultural) and tourism development along the sea shore have triggered significant landscape changes associated with urban residential development, largely through land reconversion and transformation.

When discussing urban sprawl-related processes, the natural factors, in addition to the social, political and economic ones, have always been crucial in developing metropolitan structures. Therefore, the location of the most Romanian metropolitan areas in the plain and low hills/plateaux relief units have had an important role in the emergence and development of new residential/housing patterns, especially in some of the most urbanized metropolitan systems, such as Bucharest, Oradea, Iaşi and Constanţa.

Urban sprawl-related housing dynamics in the romanian metropolitan areas

Generally, in recent years, the Romanian towns have recorded constant dynamics, facing a built-up area expansion of up to 200% (e.g. Arad 60%, Iaşi 73.7%, Suceava 76%, Mihaileşti 106.3%, Bragadiru 114.6%, Buftea 106%) or even more (e.g. Măgurele 872.4% in the Bucharest Metropolitan Area), favoured by their position in the proximity of important urban centres (Suditu et al. 2010). This unleashed phenomenon in combination with the new social and economic conditions the Romanian metropolitan structures are coping with, the need to find new housing and services alternatives inside and mostly outside the urban area had led to the new residential perspectives (Grigorescu et al. 2012a). The-

[4] http://www.zmo.ro/en/

[5] http://www.zmi.ro/en

[6] http://www.zmc.ro/

refore, combination of the urban sprawl with housing dynamics in selected metropolitan areas becomes essential for identification of the suburbanisation-related spatial trends and for spotting of new residential pathways using several indicators such as: finished dwellings, built-up area dynamics, and dwelling units' density.

Finished dwellings. This statistical indicator concerns the dwellings finished during a specific year, which did not exist before, for which all categories of work planned in the detailed design documentation were executed and which were accepted by the users (TEMPO online 2012). It also reveals the spatial transformations in terms of patterns and functions, on the one hand, and the sprawling and emergence of new residential areas, on the other.

During 1990–2012, the number of finished dwellings had a fluctuating dynamics in the Bucharest Metropolitan Area with 3 main peaks: in 1990 (7,198), 1994 (7,185) and 2008 (10,872), followed by a gradual decrease due to the economic crisis. The sharpest drop in the number of finished dwellings was recorded in Bucharest Municipality: from 6,467 in 1990 to 1,637 in 2012 (Fig. 2). Over the past few years the number of empty apartments in Bucharest has risen in the largest residential projects with about 1,000 houses available for sale. Therefore, the largest number of dwellings which potential buyers could immediately move in may be found in the Greenfield and Ibiza Sol projects located in the northern part of Bucharest (totalling over 250 dwellings) – while dozens of houses are available in residential projects such as: Primăvara Ghencea, Ten Blocks Militari, Pallady Residence or Metropolis Residence[7].

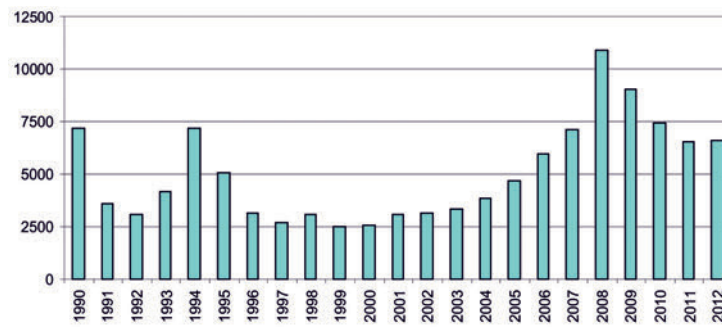


Fig. 2. Finished dwellings dynamics in Bucharest Metropolitan Area
Data source: www.statistici.insse.ro

The largest number of dwellings completed in 2012, compared to 1990, was recorded in Popeşti-Leordeni (1,398), Pantelimon, Dobroeşti, Corbeanca, Chiajna, and Crevedia (between 100 and 300 dwellings each), suggests that the localities in the vicinity of the Bucharest Municipality are more attractive in terms of real estate development, that is confirmed by the continuous expansion of the built-up area in the metropolitan area.

Over the same analysed period, in **Oradea Metropolitan Area** 12,662 dwellings were completed (66.8% out of the total number of finished dwellings in Bihor County). Most of them were completed between 2008 and 2012 (6,355–50.2% of the total number finished during the 1990–2012 period) (Fig. 3).

[7] www.ziarulfinanciar.ro

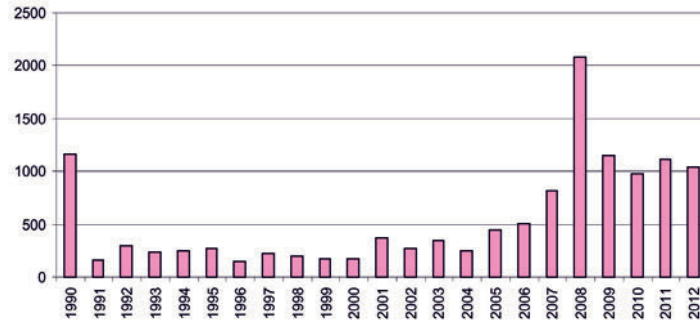


Fig. 3. Finished dwellings dynamics in Oradea Metropolitan Area
Data source: www.statistici.insse.ro

The town of Oradea is characterised by a high volume of finished dwellings due to its economic potential and development trends. Over the last few years, the real estate sector of its metropolitan area has generally followed the national trends of new residential projects which are under implementation or completed: "Housing for Young People" project, Comfort Real Estate Ensemble, Henry Ibsen Ensemble, Gh. Doja Residential Complex, Robert Owen Complex, Forvila Residential Neighbourhoods, Lotus and Europa Residential Ensembles, Luceafărul Neighbourhood, Iosia Residential Complex, Mioriţa Residential Complex, etc. (Fig. 4)

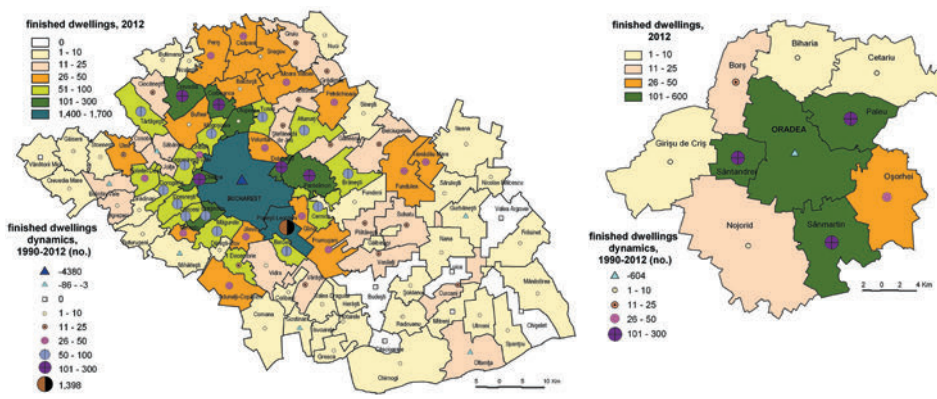


Fig. 4. Finished dwellings dynamics by localities in Bucharest Metropolitan Area (left) and Oradea Metropolitan Area (right) • Data source: www.statistici.insse.ro

The number of finished dwellings in **Iaşi Metropolitan Area** remained relatively steady in 2012 compared to 1990 (around 1,200), with fluctuations over the analysed period between 330 dwellings in 1999 and 2,147 in 2009. Spatially, the highest finished dwellings rates in 2012 compared to 1990 were recorded in the city of Iaşi (830 dwelling) with top values in Miroslava commune (259) (Fig. 5).

In Iaşi Municipality The dwelling stock has increased over the past 10 years due to hundreds of millions of euro invested in infrastructure and real estate projects (e.g. Green Park, Palas, Copou Bellevue, Dream Village, etc.), projects that have already changed and will radically change city landscape. The neighbouring villages are experiencing the same

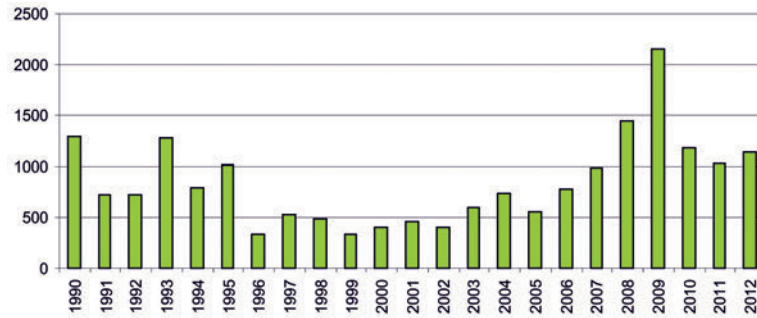


Fig. 5. Finished dwellings dynamics in Iaşi Metropolitan Area
Data source: www.statistici.insse.ro

process through the new residential areas (e.g. Bârnova, Miroslava, Ciurea, Valea Lupului, Tomeşti) (Fig. 7).

In **Constanţa Metropolitan Area** 32,037 dwellings were completed over the analysed time interval with 75% of the total number finished in Constanţa County. The largest number of houses was finalized over the 2008–2012 period (40% of the total number of houses finished during 1990–2012 period) (Fig. 6).

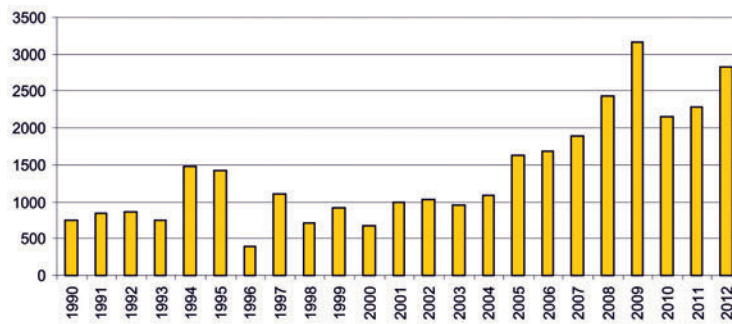


Fig. 6. Finished dwellings dynamics in Constanţa Metropolitan Area
Data source: www.statistici.insse.ro

With the exception of Murfatlar and Ovidiu towns, where the number of dwellings finished in 2012 was lower than in 1990, in the other localities the numbers ranged from 9 dwellings in Poarta Alba and Tuzla communes to 1,519 in Constanţa Municipality (Fig. 7).

Built-up area dynamics. This statistical indicator was computed based on the relationship between the 2010 data, considered as baseline (=100%), and 2012 data at the administrative-territorial units level (LAU2). The obtained values, higher or lower than 100%, point to the reduced or increased built-up surfaces in 2012 compared to 2010. Thus, during 2010–2012 period, in Bucharest Metropolitan Area the highest values were recorded north, north-west (Moara Vlăsiei and Dascălu communities) and south of Bucharest Municipality (Berceni, Colibşi and Vărăşti communities), generally due to the residential and commercial development. Both the residential projects (e.g. Green Hill Residential Ensemble in Berceni) and several individual housing projects in Voluntari (Pipera)- Tunari, Ştefăneşti, Dascălu, Corbeanca (Tamaşi village), Otopeni – Baloteşti, Mogoşoaia – Chitila,

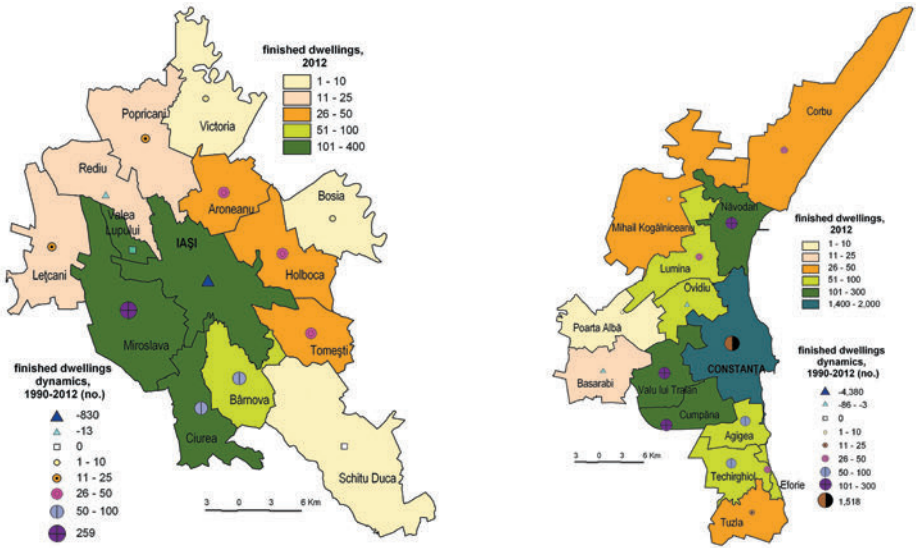


Fig. 7. Finished dwellings dynamics by localities in Iaşi Metropolitan Area (left) and Constanţa Metropolitan Area (right)
Data source: www.statistici.insse.ro

Buftea – Crevedia, Snagov-Periş and Pantelimon – Cernica – Brăneşti areas point to built--up area expansion of over 100% in the central, northern and south-eastern territory of Bucharest Metropolitan Area. The southern and south-eastern areas display rather stagnant values (Fig. 8).

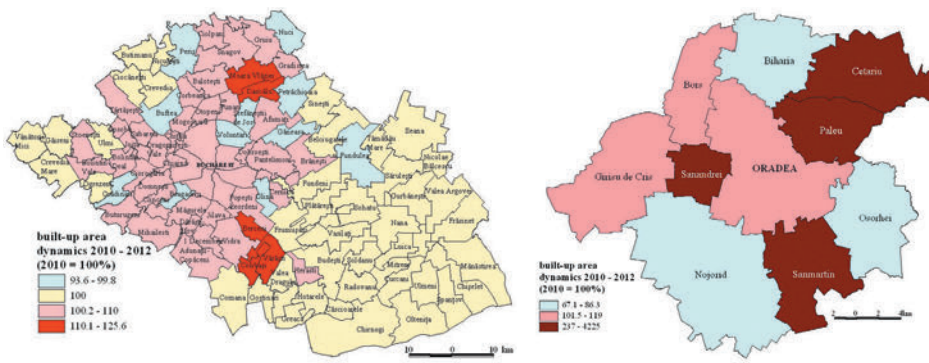


Fig. 8. Built-up area dynamics in Bucharest Metropolitan Area (left) and Oradea Metropolitan Area (right)
Data source: www.statistici.insse.ro

In the ***Oradea Metropolitan Area*** the built-up area dynamics show increased values in Cetariu, Paleu, Sânandrei and Sânmartin localities compared to the developed residential projects (e.g. Forvila Residential Neighbourhoods). Biharia, Nojorid and Osorhei localities are subject to the reduced built-up area dynamics mainly due to the expropriation processes in view of the fact that the Transylvania Motorway (the case of Biharia commune) or other transport means are constructed, such as the metropolitan ring to diverge heavy traffic from Oradea municipality to other destinations (Fig. 9).

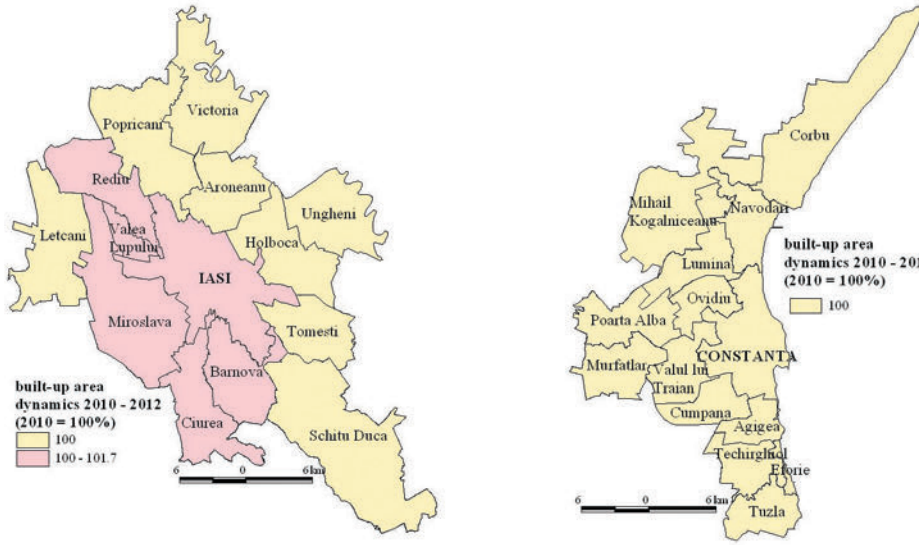


Fig. 9. Built-up area dynamics in Iaşi Metropolitan Area (left) and Constanţa Metropolitan Area (right)
Data source: www.statistici.insse.ro

In the case of ***Iaşi Metropolitan Area*** and ***Constanţa Metropolitan Area***, in spite of the increased number of finished dwellings over the last ten years, the built-up area shows declining to stagnant values in Iaşi, Rediu, Valea Lupului, Miroslava, Bârnova and Ciurea localities (Fig. 9).

The **Dwelling units density** was considered the relationship between the number of finished dwellings of a certain administrative-territorial unit and its surface (ha)[8]. Overall, the Bucharest Metropolitan Area records the highest values (about 1.95 dwelling units/ha), followed by the other metropolitan areas with up to 1.6 dwelling units/ha.

In the first half of the analysed period (1990–2012) there was a downward tendency of the dwelling units density (in Bucharest Metropolitan Area, Oradea Metropolitan Area, Iaşi Metropolitan Area and in Constanţa Metropolitan Area the drop amounted to 10%, 6%, 4.1% and 2.3%, respectively) due to a decline in dwelling units against the changing political and economic background that marked the fall of the communist regime. Subsequently, the dwelling units density had followed an upward trend, thus almost catching up in 2012 with the values recorded in 1990 (Fig. 10)

In ***Bucharest Metropolitan Area*** only two of the 13 towns recorded a rather small decrease in dwelling units density (Bolintin-Vale by 0.89% and Budeşti by less than 0.30%), while the others, acting as satellite towns of Bucharest Municipality, display a more dynamic trend of up to 2.51 dwelling units density in Bragadiru and 3.62 in Voluntari. Bucharest itself reaches the highest records of over 30 dwelling units' density/ha (Fig. 11).

In the ***Oradea Metropolitan Area***, the Oradea Municipality has recorded a reduced density after 2003 due to an increase in the Municipality surface by 434 ha, while the number of dwelling units remained relatively constant (nearly 81,000 dwelling units), followed by a constant increase, thus reaching a peak of nearly 7.5 dwelling units/ha in

[8] Urban sprawl in Europe The ignored challenge, EEA Report No. 10/2006, http://www.eea.europa.eu

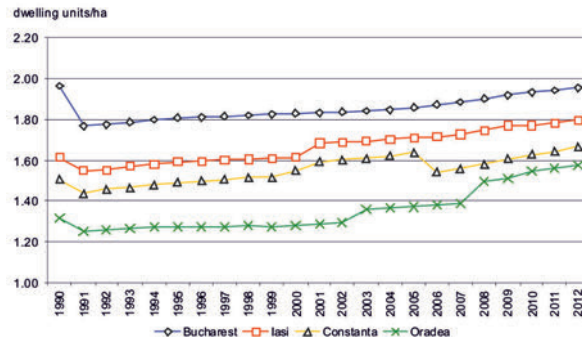


Fig. 10. Dwelling units density in selected metropolitan areas, 1990–2012

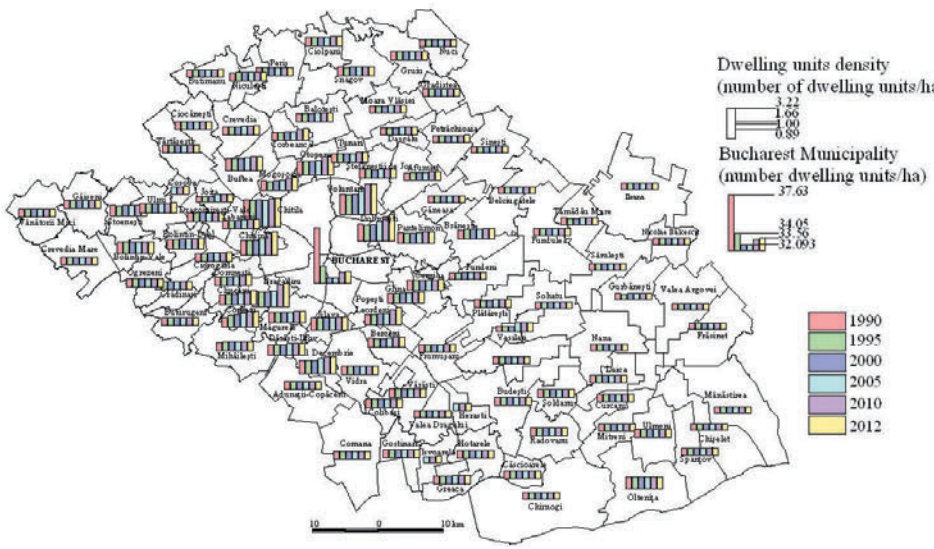


Fig. 11. Dwelling units density dynamics in Bucharest Metropolitan Area
Data source: www.statistici.insse.ro

2012. Generally, in the metropolitan area the dwelling units' record was the lowest – up to 0.66 dwelling units/ha (Fig. 12).

In the ***Iaşi Metropolitan Area*** the maximum values were recorded in Iaşi Municipality (up to 11.5 dwelling units/ha in 2005). However, the indicator reveals uneven dynamics in relation to total surface of the area which decreased by 136 ha between 1990 and 1994 and increased by 673 ha in 2010. The surrounding localities recorded lower values of up to 1.85 dwelling units/ha (Fig. 13).

In the ***Constanţa Metropolitan Area***, the Constanţa Municipality records rather constant values of about 8.80 to 9.38 dwelling units/ha in relation to the total surface dynamics which was subject to increase/decrease processes (Fig. 13). In the remaining part of the metropolitan area, except for the town of Eforie with about 10 dwelling units/ha recorded, the values do not exceed 5.28 dwelling units/ha.

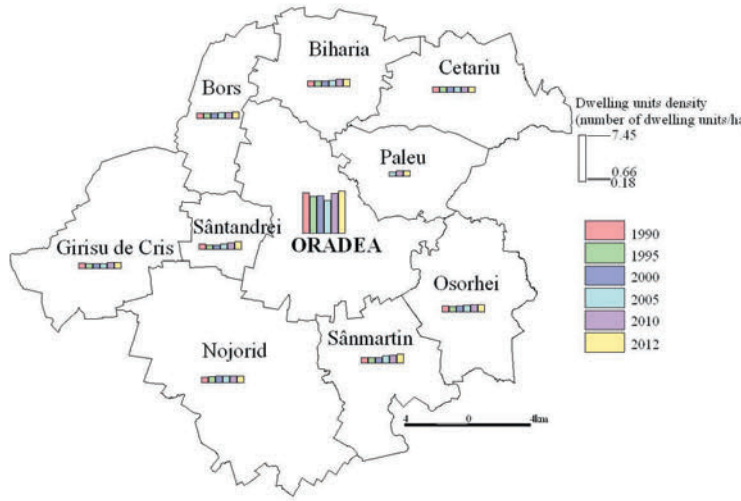


Fig. 12. Dwelling units density dynamics in Oradea Metropolitan Area
Data source: www.statistici.insse.ro

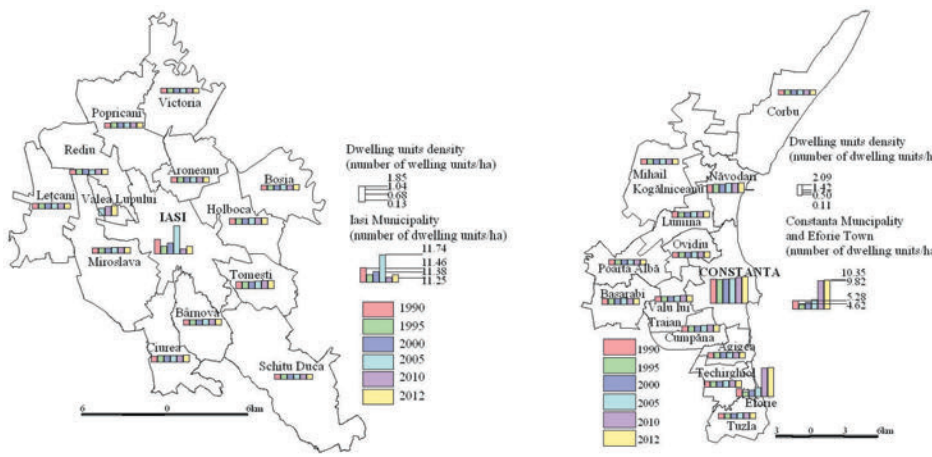


Fig. 13. Dwelling units' density dynamics in Iaşi Metropolitan Area (left) and Constanţa Metropolitan Area (right) 1990–2012 • Data source: www.statistici.insse.ro

Over the past twenty-five years, Romania housing sector has undergone dramatic transformations induced by a rapid privatisation and the reduced government role in the building and allocation of housing (Conway et al. 1995). Moreover, a high fragmentation and abandonment of property triggered by the transition from State and collective property to private ownership induced the developers to carry out "strategies" able to turn these abandoned terrains mainly into residential areas. Consequently, they purchased large surfaces of land and endowed it with the requisite environmental infrastructure (sewage networks, water supply systems, wastewater treatment plants, waste collection systems) in order to develop residential projects. These practices in combination with

enhanced financial crediting provided by the banks encouraged the real-estate boom in terms of increased number of transactions and prices dynamics until 2008 when the financial crises struck. If before 1990 most of the new residential areas had been predominantly in agricultural use and their value was only a few eurocents/sq.m, soon after the residential projects were finished the prices raised up to more than 100 euro/sq.m. Thus, Bucharest Metropolitan Area was experiencing the highest residential boom until 2008 when the most expensive land valued at up to 1,100 euro/sq.m., for example in the Pipera-Tunari area, , followed by the town of Otopeni with 600–800 euro/sq.m near the airport and the Bucharest-Ploieşti Motorway, and Snagov with 400 euro/sq.m. near the lake, etc. Following the economic crisis the real-estate market collapsed and in the majority of cases the prices dropped to more than half of their previous value (Grigorescu et al. 2012a).

Compared with other Central and East-European countries (e.g. Hungary, Poland, the Czech Republic), after 1990 both economic and residential suburbanisation occurred at the same time, supported by the processes, such as privatisation of apartment buildings, the boom on the real estate market and the availability of cheaper properties in the suburbs, emergence of huge shopping centres, hypermarkets, warehouses and industrial properties (logistic parks), etc. (Soós and Ignits 2003; Sykora 2006; Sykora and Ourednicek 2007; Hirt 2008).

It is acknowledged that the new housing developments regularly emerge in the areas with good physical environment and transport connection to the city centres (Sykora and Ourednicek 2007). Sometimes, these are counterbalanced by the design of the residential projects or the access to different services related to security, health, leisure etc., turning them into luxury neighbourhoods or "gated communities" (Grigorescu 2010).

In the Bucharest Metropolitan Area six compact residential areas (*Pipera-Tunari*, *Ştefăneşti*, *Mogoşoaia-Chitila*, *Corbenca-Otopeni-Baloteşti*, *Snagov-Periş*, *Pantelimon-Cernica-Brăneşti*) and six residential nuclei (*Dascălu*, *Buftea-Crevedia*, *Tărtăşeşti*, *Domneşti*, *Berceni*, *Comana*) were identified conditioned by the traditional nucleus in the north and north-east and by the low land prices, attractive environmental features and good transport infrastructure in the south and north-west (Fig. 14).

Although in the Oradea Metropolitan Area the number of residential property transactions increased in recent years, in spatial terms the residential projects are quite scattered, however, some development clusters can yet be distinguished: in the south-western part of the city where important residential projects can be found (e. g. Europe, Henry Ibsen, Ioşia), Paleu (e.g. Golden Residence), Sântandrei, etc. (Fig. 13).

The metropolitan area of Constanţa witnessed a sprawling process in the Lazu – Agigea, Cumpăna, Poiana – Ovidiu, Valul lui Traian and Mamaia Sat – Năvodari areas, but over permissive legal framework with respect to land use conversion and relocation in combination with high land prices (especially before 2008) had led to a certain marginalization of the rural population.

In the case of the Iaşi Metropolitan Area, the investments in infrastructure and real-estate projects were decisive for the growth of the housing stock and the development of large residential areas (individual dwellings or housing projects) in the core-city and in the surrounding communes (e.g. Bârnova, Holboca, Miroslava, Ciurea, Valea Lupului, Tomeşti) (Fig. 15).

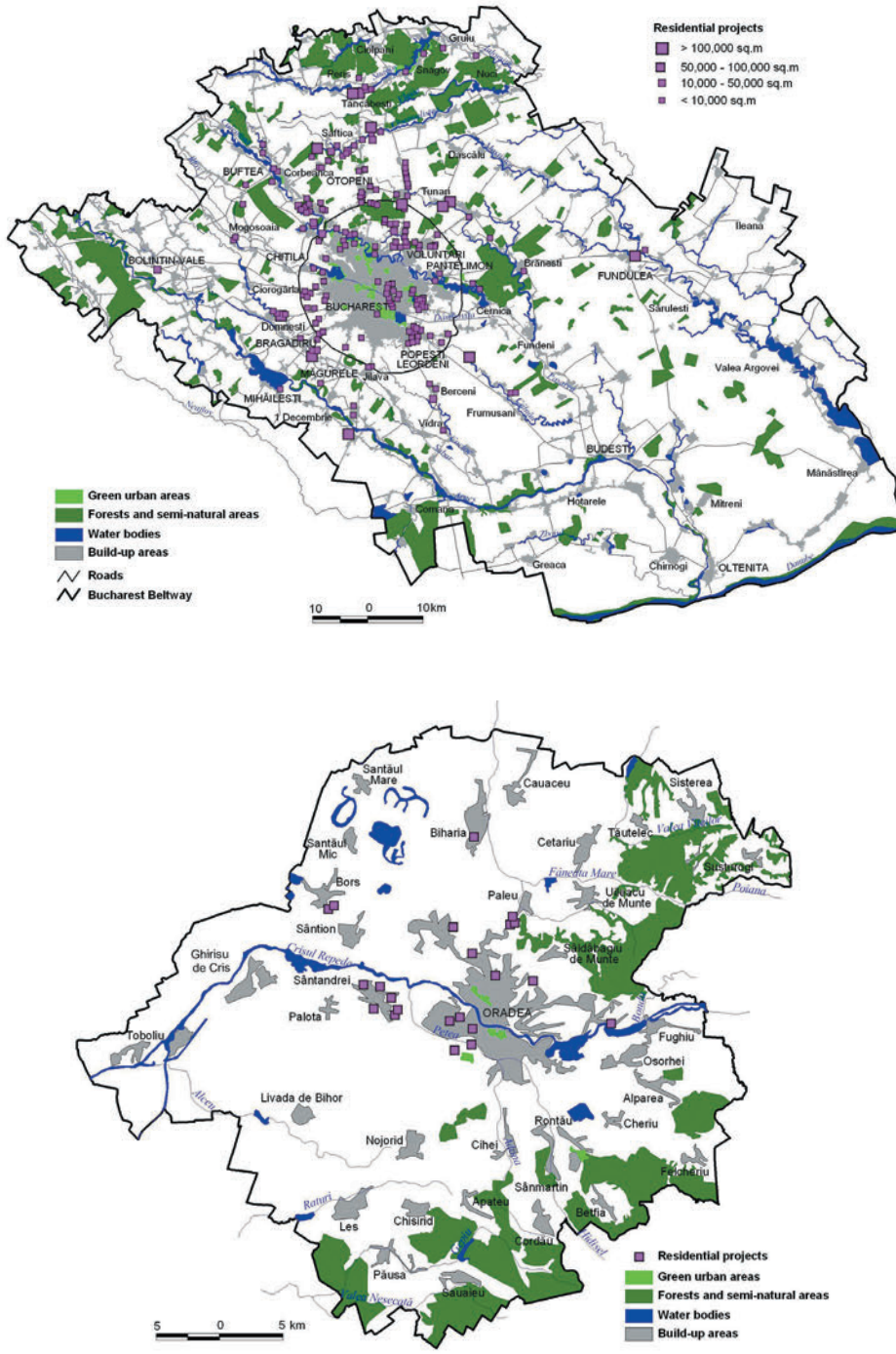


Fig. 14. Residential projects in the Bucharest Metropolitan Area (top) and Oradea Metropolitan Area (bottom)
Source: Grigorescu et al. (2012a).

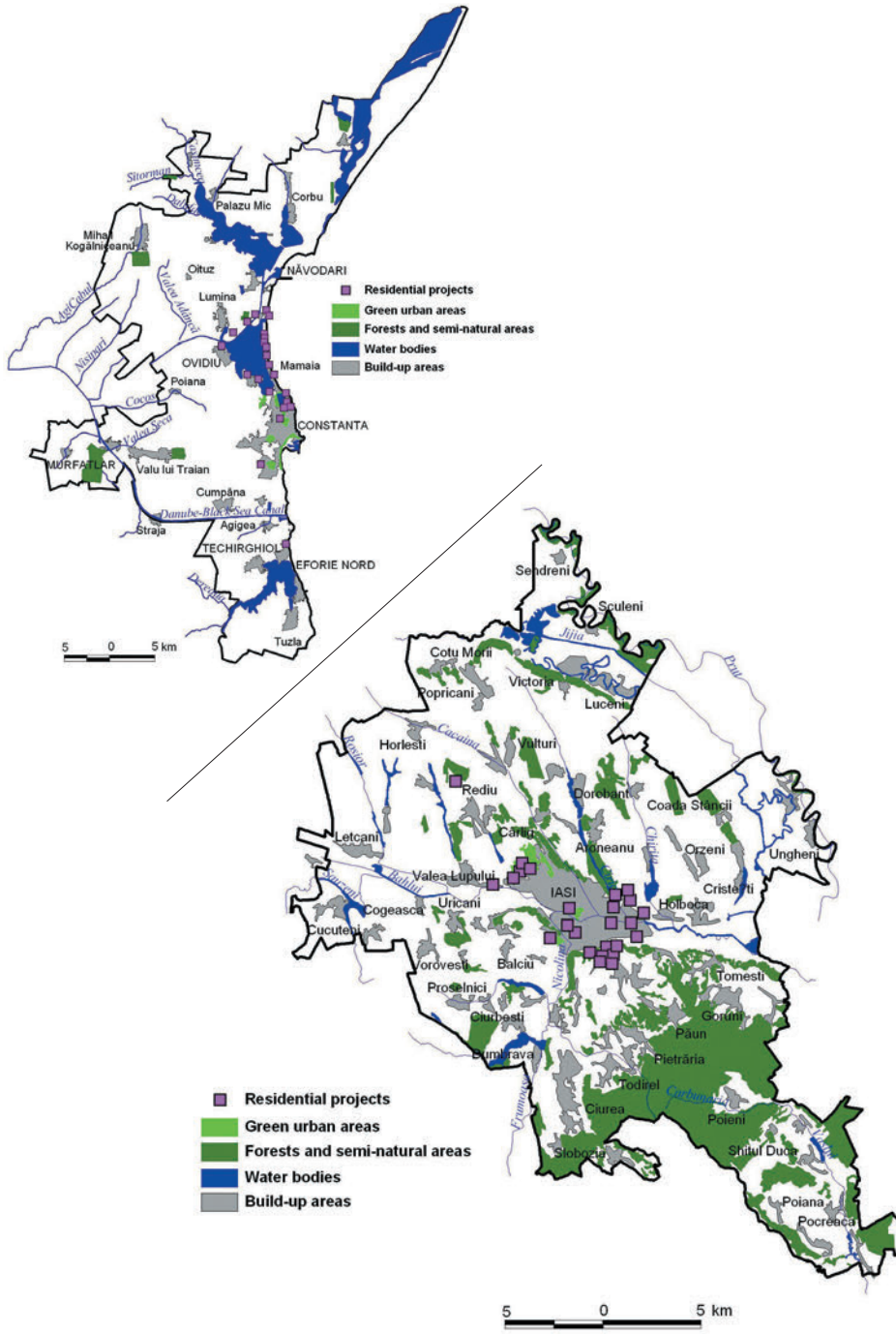


Fig. 15. Residential projects in the Constanţa Metropolitan Area (top) and Iaşi Metropolitan Area (bottom)
Source: Grigorescu et al. (2012a).

Discussions and conclusions

The urban sprawl-related trend together with housing dynamics enable to outline the main residential patterns: *irregular residential development* characterized by individual houses which vary in size and architecture according to the availability and affordability of land, often located in the city's outskirts; *small-size residential projects* made up of high buildings or villas, sometimes providing luxury apartments, usually developed within the city limits and their surrounding areas and *residential complexes/projects* which, according to their affordability and accessibility could be divided into *open residential projects* – residential areas with access to all the necessary environmental facilities and other services and *gated communities* – for high-income groups.

The current study reveals rather uneven trends in the evolution of the urban sprawl--related housing dynamics driven by the indicators under scrutiny in the selected metropolitan areas. Hence, the dwellings dynamics records a decreasing drift in the Bucharest Metropolitan Area and a slight upward tendency in the remaining part of the analysed metropolitan areas. In terms of spatial dimension of the analysed phenomenon the built--up area dynamics points to higher values for Bucharest Metropolitan Area of up to over 100%. Overall, the dwellings units' density indicator shows an upward trend in all analysed metropolitan areas, thus revealing the growing need of housing stock over the last twenty-five years.

The spatial transformations triggered by the urban sprawl phenomenon and the related housing dynamics and residential development had led to new urban patterns which have affected the landscape of metropolitan areas. As a result, the territorial governance involvement in the local policy to manage urban sprawl-related impacts becomes of ever greater importance.

References

Bayona J., Gil-Alonso F., 2011, *Foreign Migration, Urban Growth and Suburbanisation Dynamics in Large Spanish Metropolitan Areas*, Workshop 04: Growing discrepancies between sustainability and affordability in the metropolitan housing markets in the period of public finance crisis, Enhr Conference, 2011, 5–8 July, Toulouse. http://www.enhr2011.com/sites/default/files/Paper-BAYONA_GIL-WS04.pdf

Bălteanu D., Badea L., Buza M., Niculescu Gh., Popescu C., Dumitraşcu M. (eds.), 2006, *Romania. Space, Society, Environment*, The Publishing House of the Romanian Academy, Bucharest.

Bălteanu D., Grigorescu I., 2006, *The impact of Changing land Use upon the Environment in the Metropolitan Area of Bucharest*, Preliminary Considerations, Romanian Review of Regional Studies – Journal of the Centre for Regional Geography, II, Cluj-Napoca.

Conway F., Katsura H., Budisteanu I., Pascal I., 1995, *Final Report. The Transition to a market-based housing sector in Romania*, Report prepared for International City County Management Association. Local Government and Housing Privatization, USAID Contract No. EUR-0034-C-00-2034-00, The Urban Institute, Washington, D.C.

Erdeli G., Cândea M., Braghină C., Costachi S., Zamfir D., 1999, *Dicţionar de Geografie Umană/ Human Geography Dictionary* (in Romanian), Edit. Corint, Bucureşti.

Erdeli G., Simion G., 2006, *Local Decentralization and extended suburbanization: A geographical approach of the metropolisation process in Romania*, Buletinul Societăţii de Geografie din România, XII (XXCII), Bucureşti, pp. 107–120.

ESPON FOCI, 2010, *Future Orientations for Cities (FOCI)*, Final Report, Version 15/December/2010.

Geografia României/The Geography of Romania, 1984, vol. II, *Geografia umană şi economic/Human and Economic Geography (in Romanian)*, Editura Academiei Române, Bucureşti.

Gherasim V. (coord.), 2003, *Studiu privind necesitatea organizării Zonei metropolitane Bucureşti*, Primăria sector I, Universitatea Bucureşti, Facultatea de Drept, Bucureşti.

Grigorescu I., 2008, *Environmental issues in Bucharest Metropolitan Area*, Journal of The Geographical Society of Hosei University, 40, Tokyo, pp. 11–21.

Grigorescu I., 2010, *Modificările mediului în Aria Metropolitană a Municipiului Bucureşti*, Editura Academiei Române, Bucureşti.

Grigorescu I., Dumitrescu (Mitrică) B., 2010, *The role of metropolitan areas in the Romanian urban system. A case-study: Bucharest Metropolitan Area*, Time-space Changes of the Regional and Landscapes Structures, Institute of Geonics Ostrava, Brno branch, pp. 29–34.

Grigorescu I., Mitrică B., Mocanu I., Nicoleta T., 2012a, *Urban sprawl and residential development in the Romanian Metropolitan Areas*, Romanian Journal of Geography, 56 (1), Editura Academiei Române, Bucureşti, pp. 43–59.

Grigorescu I., Mitrică B., Kucsicsa G, Popovici A., Dumitraşcu M., Cuculici R., 2012b, *Post-communist land use changes related to urban sprawl in the Romanian Metropolitan Areas*, HUMAN GEOGRAPHIES – Journal of Studies and Research in Human Geography, 6, 1, pp. 35–46.

Guran-Nica L., Sofer M., 2011, *Migration dynamics in Romania and the Counter-Urbanisation Process: A Case Study of Bucharest's Rural-Urban Fringe*, [in:] Hedberg C., Carmo, R. M. (eds.), *Translocal Ruralism: Mobility and Connectivity in European Rural Space*, The GeoJournal Library Book series, 103, Springer, pp. 87–102.

Hirt S., 2008, *Suburbanizing Sofia: Characteristics of Post-Socialist Peri-Urban Change*, Urban Geography, Bellwether Publishing, Ltd., pp. 755–780, DOI 10.2747/0272-3638.28.8.755.

Ianoş I. (coord.), 1998–1999, *Analiza principiilor, obiectivelor strategice şi a politicilor specifice serviciilor publice în scopul realizării planului de amenajare a teritoriului zonal – Zona metropolitană Bucureşti/ The analysis of principles, strategic objectives and specific policies of public services in order to achieve the regional spatial plan - Bucharest metropolitan area* (in Romanian), Institutul de Geografie, Centrul de Proiectare Urbană, Bucureşti.

Ianoş I., Cercleux A. L., Pintilii R. D., 2010, *Remarks on identity building of rural and urban communities in the Bucharest Metropolitan Area*, Analele Universităţii din Oradea – Seria Geografie, XX, 2 December, pp. 173–183.

Ianoş I., Peptenatu D., Drăghici Cr., Pintilii R. D., 2012, *Management elements of the emergent metropolitan areas in a transition country. Romania, as case-study*, Journal of Urban and Regional Analysis, IV, 2, Bucharest, pp. 149–172.

Iojă C., Onose D., Nită M., Vanău G., Pătroescu M., Gavrilidis A., Saghin I., Zarea R., 2011, *The conversion of agricultural lands into built surfaces in Romania*, Recent Researches in Urban Sustainability and Green Development, pp. 115–120.

Iordan, I., 1998, *Les catégories taxonomiques: zone suburbaine, zone périurbaine, zone métropolitaine. Socio-economic changes in the suburban areas of large cities in Romania and Poland*, Romanian-Polish Geographical Seminar, Academia Româna, Institutul de Geografie, Bucureşti.

Iordan I., 2003, *România, încotro? Regionalizare – Cum? Când?/ Romania, whereto? Regionalization – How? When?* (in Romanian), CD Press, Bucureşti.

Kabisch N., Haase, D., 2011, *Diversifying European Agglomerations: Evidence of Urban Population Trends for the 21st Century*, Population, Space and Place, 17, pp. 236–253.

Leetmaa K., 2008, *Residential Suburbanization in the Tallin metropolitan area. Dissertation thesis*, Tartu University Press, Tartu.

Mitrică B., Grigorescu I., Urucu V., Dobraca L., 2014, *Oraşele şi ariile metropolitane/Towns and metropolitan areas*, [in:] *România: Spaţiu, Societate, Mediu/Romania: Space, Society, Environment*, (in Romanian), Academiei Române, Bucureşti (in print).

Nicolae I., 2002, *Suburbanismul, ca fenomen geografic în România/The suburbanism, as a geographical phenomenon in Romania* (in Romanian), Meronia, Bucureşti.

Niculiţă L., Iojă C., Tudor A., Pavelescu G., Iojă, A., 2011, *Evaluation of environmental impact caused by new residential areas in the Bucharest Metropolitan Area*, International Conference on Urban Sustainability, Cultural Sustainability, Green Development, Green Structures and Clean Cars, USCUDAR – Proceedings, pp. 130–135,

Patacchini E., Zenou Y., Henderson J. V., Epple D., 2009, *Urban Sprawl in Europe, Brookings-Wharton Papers on Urban Affairs*, Published by: The Brookings Institution, pp. 125–149.

Pătroescu M., Vânău G., Niţă M., Iojă C., Iojă A., 2011, *Land Use Change in the Bucharest Metropolitan Area and its Impacts on the Quality of the Environment in Residential Developments*, Forum Geografic, X (1), pp. 177–186, DOI 10.5775/fg.2067-4635.2011.036.i.

Săgeată R., 2005, *Zona metropolitană Bucureşti. Propunere pentru o posibilă delimitare/ Bucharest Metropolitan Area. Proposal for a possible delineation* (in Romanian), Lucrările Seminarului Geografic „Dimitrie Cantemir", Universitatea „Al. I. Cuza", Iaşi, 25, 2004.

Săgeată R., 2006, *Deciziile politico-administrative şi organizarea teritoriului. Studiu geografic cu aplicare la teritoriul României/The political-administrative decisions and territorial planning. A geographical study with a focus on the Romanian territory* (in Romanian), Universităţii Naţionale de Apărare „Carol I" Top Form, Bucureşti.

Soos G., Ignits G., 2003, *Suburbanization and its consequences in the Budapest Metropolitan Area*, Third EuroConference The European City in Transition, The City and the Region, Bauhaus-Universität Weimar, Germany, Supported by the European Commission.

Strategia de Dezvoltare Teritorială a României (SDTR)/Romanian National Strategy for Territorial Development (in Romanian), 2015, Ministry of Regional Development and Public Administration, Second Version/February 2015 http://www.sdtr.ro//fckeditor/uploads/Strategia%20de%20dezvoltare%20teritoriala%20a%20Romaniei%20-%20proiect.pdf.

Sykora L., 2006, *Urban development, policy and planning in the Czech Republic and Prague*, [in:] Altrock U., Guntner S., Huning S., Peters D. (eds.), *Spatial Planning and Urban Development in the New EU Member States. From Adjustment to Reinvention*, Ashgate Publishing Limited, England.

Sykora L., Ourednicek M., 2007, *Sprawling post-communist metropolis: commercial and residential suburbanisation in Prague and Brno, the Czech Republic* [in:] Razin E, Dijst M., and Vazquez C. (eds.), *Employment Deconcentration in European Metropolitan Areas*, GeoJournal Library, 91, pp. 209–233, DOI: 10.1007/978-1-4020-5762-5_8.

Suditu B., 2009, *Urban sprawl and residential mobilities in the Bucharest area – reconfiguration of a new residential geography*, Human Geographies, IV, 2, pp. 79–93.

Suditu B., Ginavar A., Muică A., Iordăchescu C., Vârdol A., Ghinea B., 2010, *Urban sprawl characteristics and typologies in Romania*, Journal of Studies and Research in Human Geography, 4, 2, pp. 79–87.

Suditu B., 2012, *Urban sprawl – the legal context and the territorial practices in Romania*, HUMAN GEOGRAPHIES – Journal of Studies and Research in Human Geography, 6, 1, pp. 73–77.

Zilişteanu I. R., 2011, *National Housing Policies in Romania between 1990 and 2010*, Romanian Economic and Business Review, 6, 1.

TEMPO online, 2012, https://statistici.insse.ro/shop/

Urucu V., Dobraca L., Dumitrescu (Mitrică) B., 2006, *Towns, în Romania: Space, Society, Environment*, Academiei Române, Bucureşti, pp. 195–211.

Berg L. van den, Drewett R., Klaasen L. H., Rossi A., Vijverberg C. H. T., 1982, *Urban Europe: A study of Growth and Decline*, Oxford, Pergamon Press.

www.ziarulfinanciar.ro

www.zmo.ro/en/

www.zmi.ro/en/iasi_metropolitan_area.html

www.zmc.ro/

Informacja dla Autorów

Studia Obszarów Wiejskich to wydawnictwo publikujące oryginalne opracowania naukowe z zakresu geografii społeczno-ekonomicznej, geografii wsi i przestrzennego zagospodarowania kraju w języku polskim lub/i angielskim. Zapraszamy Autorów do nadsyłania wartościowych artykułów. Przestrzeganie poniższych zaleceń formalnych usprawni prace redakcyjne i przyczyni się do szybszej publikacji nadsyłanych materiałów.

Uwagi ogólne. Zgłoszenie przez autora(ów) tekstu do *Studiów Obszarów Wiejskich* oznacza, że nie jest on przewidziany do druku w innym wydawnictwie. Jest także jednoznaczne z wyrażeniem zgody na jego rozpowszechnianie przez IGiPZ PAN w formie drukowanej i elektronicznej z wykorzystaniem licencji Creative Commons: uznanie autorstwa, 3.0 Polska.
Podstawowym sposobem przekazania materiałów do druku jest przesłanie tekstu i załączników na płycie CD na adres wskazany przez redakcję. Tekst artykułu powinien być napisany zwięźle, ale jasno, przy użyciu edytora MS WORD. Objętość artykułu nie powinna przekraczać 6000 słów. Wszystkie załączniki graficzne muszą być dostarczone w formie osobnych plików. Preferowany format dla danych liczbowych to MS EXCEL, a dla załączników graficznych pliki w formacie JPG, TIF, EPS.

Strona tytułowa. Na pierwszej stronie należy w kolejności umieścić: tytuł pracy w języku polskim (maksymalnie 120 znaków, czcionka Times New Roman 14 Bold), tytuł pracy w języku angielskim (czcionka Times New Roman 12 Bold), imię i nazwisko autora/autorów (cyfry arabskie po nazwisku, umieszczane jako indeks górny, określają odp. afiliację), afiliację, adres(y), e-mail(e), zarys treści (maksymalnie 200 słów powinien zawierać: sformułowanie celu pracy/badań, identyfikację obiektu badań, przedmiotu rozważań, istotę stosowanej metody, najważniejsze wyniki i wnioski), słowa kluczowe (podaje się nie więcej niż 5 słów kluczowych).

Tekst artykułu pisany czcionką Times New Roman 12, interlinia 1,5; marginesy boczne 2,5 cm. Śródtytuły pierwszego rzędu pisane czcionką Times New Roman Bold 12, drugiego rzędu Times New Roman 12. W tekście opracowania, przy powoływaniu się na literaturę, należy podawać nazwisko autora oraz rok publikacji, np. (Nowak 2004; Kowalski 2005, 2007) lub według A. Nowaka (2006), a przy cytowaniu również numer strony, np. według A. Nowaka (2006, s. 6). W powołaniach na więcej prac tego samego autora, które ukazały się w tym samym roku, podaje się: (Nowak 1987a, b). W przypadku wspólnej publikacji dwóch autorów podaje się: (Kowalski i Nowak 1999), a trzech i więcej autorów: (Kowalski i in. 2006).

Podziękowania – opcjonalnie oraz ewentualna informacja o źródłach finansowania publikacji i wkładzie innych podmiotów w opracowanie publikacji (zgodnie z wymogami jakościowymi i standardami etycznymi opisanymi niżej) należy zamieścić po zasadniczym tekście.

Rysunki i fotografie powinny być zamieszczone w tekście, a ponadto dołączone w postaci osobnych plików posiadających numerację zastosowaną w tekście. Wymagana jest wysoka rozdzielczość rysunków i fotografii (min. 300 dpi w plikach rastrowych JPG lub TIF). Dopuszczalne formaty wektorowe (EPS, CDR). Tytuł, objaśnienia znaków legendy i źródło w języku polskim i angielskim powinny znajdować się poza rysunkiem, w pliku tekstowym. Część tomów drukowana jest w kolorze czarno-białym. Należy upewnić się, że po zastąpieniu ew. kolorów skalą szarości i przeskalowaniu do rozmiarów maksymalnie 12,5 x 20 cm rysunki i fotografie będą wystarczająco czytelne. Zalecany krój czcionki dla napisów będących częścią grafiki (bez możliwości edycji) to Calibri.

Tabele powinny być zamieszczone w tekście. Każda tabela powinna zawierać zwięzły tytuł (u góry) w języku polskim, kolejny numer i źródło danych (u dołu). Wszystkie skróty powinny być objaśnione (tytuł, źródło i objaśnienia należy dołączyć jedynie w pliku tekstowym). W komórkach tabeli nie powinny znajdować się znaki tabulacji (Tab) ani końca akapitu (Enter) – w razie potrzeby można korzystać ze znaku wymuszonego końca wiersza (Shift+Enter).

Spis literatury ograniczony do literatury cytowanej, w porządku alfabetycznym, należy zamieścić poniżej tekstu artykułu według poniższego wzoru:

- Artykuły w czasopismach i seriach wydawniczych:

Wójcik M., 2011, *Współczesne kierunki i podejścia badawcze w geografii wsi*, Przegląd Geograficzny, 83, 2, s. 163–185.

Kulikowski R., 2013, *Obszary wiejskie województwa podlaskiego w perspektywie 2050 roku*, Studia Obszarów Wiejskich, 31, s. 129–142.

- Rozdziały w pracach zbiorowych:

Zegar J.S., 2014, *Typy społeczno-ekonomiczne indywidualnych gospodarstw rolnych według rodzaju gmin*, [w:] R. Rudnicki. M. Kluba (red.), *Zintegrowany rozwój obszarów wiejskich w świetle polityki Unii Europejskiej*, t. 1, *Rolnictwo i Wspólna Polityka Rolna*, Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika, Toruń, s. 57–73.

- Książki

Bański J., 2006, *Geografia polskiej wsi*, PWE, Warszawa.

Streszczenie. Na końcu opracowania powinno być zamieszczone streszczenie w języku angielskim zweryfikowane przez native-speakera. Objętość streszczenia: około 250-400 słów.

Ocena artykułów i dopuszczenie ich do druku. Wszystkie artykuły nie spełniające powyższych zasad będą odsyłane do poprawy. Artykuły podlegają ocenie przez dwóch recenzentów. W procesie recenzowania stosowane jest rozwiązanie, w którym autor(zy) i recenzenci nie znają swoich tożsamości (tzw. "*double-blind review proces*"). Wynik recenzji będzie miał decydujący wpływ na możliwość opublikowania materiału w *Studiach Obszarów Wiejskich*. Szczegółowe zasady dotyczące recenzowania zamieszczone są na stronie internetowej czasopisma.
Wersja pierwotna. Wersja papierowa i elektroniczna są tożsame, jednakże Redakcja wskazuje wersję papierową jako wersję pierwotną czasopisma.

Wymogi jakościowe i standardy etyczne. W trosce o dochowanie najwyższych standardów redakcyjnych oraz w celu zapobieżenia nierzetelności w publikacjach naukowych określanych jako tzw. *ghostwriting* i *guestauthorship* Redakcja *Studiów Obszarów Wiejskich* wymaga od autorów ujawniania informacji o podmiotach przyczyniających się do powstania publikacji (wkład merytoryczny, rzeczowy, finansowy etc.). W tym celu zobowiązuje się autorów do zachowania następujących standardów podczas przygotowywania tekstów składanych do publikacji: 1) w przypadku publikacji naukowych, które nie zostały wykonane samodzielnie, tzn. opracowano je we współautorstwie lub z wykorzystaniem pomocy wyspecjalizowanego podmiotu (osoby fizycznej lub prawnej), w końcowej części pracy (w punkcie: "Podziękowania") należy zawrzeć notę, w której ujawniany jest wkład poszczególnych autorów (współautorów) w powstanie publikacji (artykułu, monografii). Oznacza to konieczność podania ich afiliacji oraz kontrybucji, tj. informacji kto jest autorem koncepcji, założeń, zastosowanych metod, protokołu itp., wykorzystywanych w toku pracy badawczej – przygotowywania publikacji; główną odpowiedzialność ponosi autor zgłaszający manuskrypt. 2) Autor/współautorzy podają ponadto informację o ewentualnych źródłach finansowania publikacji, wkładzie instytucji naukowo-badawczych, stowarzyszeń i innych podmiotów w opracowanie publikacji (*financial disclosure*). Redakcja wydawnictwa informuje, że wszelkie przejawy nierzetelności naukowej, zwłaszcza łamania i naruszania zasad etyki obowiązujących w nauce, w tym wykryte przypadki *ghostwriting*, *guestauthorship* będą dokumentowane i oficjalnie demaskowane, włącznie z powiadomieniem odpowiednich podmiotów (instytucje zatrudniające autorów, towarzystwa naukowe, stowarzyszenia edytorów naukowych itp.).