

**“THE EURURALIS IS APPROACHING,
WHAT DO WE DO?”**

*Policy-Science Interface
in Rural Development Practice in Poland*

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Abstract

This research is a case study addressed mainly to the Polish rural development policymakers. It gains insight into a policy-science interface in rural development practice in Poland and present possible ways to utilize the EUruralis project.

The analysis is based on two models of relation between policymakers and scientists: 1) *Knowledge Production* and 2) *Knowledge Co-production* and the *concept of knowledge utilization* by policymakers. Model 1 - *Knowledge Production* - assumes one-way flow of information from policymakers to scientists, whereas model 2 - *Knowledge Co-production* - performs interactive vision and characterizes the involvement of users into the co-production process. This research shows that the way scientific knowledge is being produced influences the utilization of data by policymakers.

One part of this thesis investigates the relation between Polish rural development policymakers and scientists in order to improve current practice and contribute to knowledge usage by policymakers to assure multi-dimensional and sustainable development of rural areas. The interviews that were conducted with Polish scientists and civil servants from the Ministry of Agriculture and Rural Development, as well as the analysis of rural development past have led to the conclusion that Polish policymakers and scientists create a sort of 'epistemic community' in the way their cooperation and interaction fluctuate around the co-production model.

In the second part of this research, the EUruralis project has been studied. This project is a scenario study on rural areas in Europe and presents a prognosis concerning possible threats and opportunities for economical, ecological and socio-cultural growth of rural areas and their communities. The interviews with the EUruralis authors and their analysis results allow for the assumption that the EUruralis is a product of co-production. Although, the EUruralis might not exactly fit into the Polish institutional setting, there is a strong interest from Polish policymakers in this project, who are still looking for directions of its development. Hence, the research examines the attitude of Polish policymakers and scientists to the EUruralis and also evaluates chances for the project to be embedded into Polish rural practice as a discussion support instrument.

KEY WORDS: Rural Development in Poland; EUruralis project, Co-production, Knowledge utilization, epistemic community

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Table of Content

ABSTRACT.....	V
ACKNOWLEDGEMENT	VII
TABLE OF CONTENT	1
LIST OF TABLES AND FIGURES.....	5
LIST OF ACRONYMS.....	7
CHAPTER 1 INTRODUCTION.....	9
1.1 INTRODUCTION OF THE FIELD OF THE STUDY	9
1.2 PROBLEM STATEMENT	10
1.2.1 <i>Research objective</i>	11
1.2.2 <i>Research questions</i>	13
1.3 RESEARCH METHODOLOGY.....	14
1.3.1 <i>Research units and observation units</i>	14
1.3.2 <i>Case study</i>	15
1.3.3 <i>Interviewing</i>	15
1.3.4 <i>Participant observation</i>	16
1.4 OUTLINE OF THE THESIS.....	16
CHAPTER 2 THEORETICAL FRAMEWORK.....	19
2.1 MODELS OF RELATION BETWEEN POLICYMAKERS AND SCIENTISTS	19
2.2 CONCEPT OF KNOWLEDGE UTILIZATION	24
Forms of knowledge utilization	24
How to measure utilization?.....	27
2.3 LINKAGE BETWEEN KNOWLEDGE PRODUCTION AND UTILIZATION	27
CHAPTER 3 RURAL DEVELOPMENT PRACTICE IN POLAND.....	33
3.1 AGRICULTURAL DIARY.....	33
Past.....	33
After accession to the European Union	35
Rural Development Documents	36
3.2 CHARACTERISTICS OF RURAL AREAS IN POLAND.....	38
Non agricultural activities	39
Natural Environment and cultural values in rural areas.....	39
3.3 UTILIZATION OF KNOWLEDGE BY RURAL DEVELOPMENT POLICYMAKERS	41
3.3.1 <i>Environmental Knowledge</i>	46
3.4 QUALITY OF SCIENTIFIC REPORTS	47
3.5 OFFICIAL RELATION BETWEEN THE MINISTRY AND SCIENTIFIC INSTITUTES.....	47
3.6. COOPERATION BETWEEN USERS AND PRODUCERS	49
Beginnings	49
Interactions.....	50
Difficulties	50
What kind of relation?.....	51
How to improve cooperation between users and producers?.....	52
3.7 COOPERATION BETWEEN SCIENTISTS.....	53
3.8 POLICY – SCIENCE INTERFACE IN RURAL DEVELOPMENT IN POLAND	55

What is happening now in Poland within the rural development practice?.....	55
How policymakers perceive science and scientists?.....	56
How scientists see science in policymaking and policymakers?.....	57
Co-production – summary.....	57
CHAPTER 4 THE EURURALIS STORY.....	59
4.1 INTRODUCTION OF THE EURURALIS PROJECT.....	59
4.1.1 <i>Prelude</i>	59
4.1.2 <i>The EURuralis models</i>	60
4.1.3 <i>The EURuralis concepts</i>	61
DPSIR.....	61
Drivers.....	61
Scenario-model.....	62
Concept of sustainability.....	63
The choice of indicators to perform the sustainability.....	63
A certain way of presenting core models.....	64
4.1.4 <i>The EURuralis versions</i>	64
4.2 SCIENTISTS –POLICYMAKERS COOPERATION WITHIN THE EURURALIS.....	65
4.3 POLISH – DUTCH SYNERGY WITHIN THE EURURALIS.....	67
Letter of Intent.....	67
4.2 POLISH POLICYMAKERS AND SCIENTISTS SPEAK ABOUT THE EURURALIS.....	68
What Polish policymakers and scientists think about application of the EURuralis?.....	70
Dutch view of collaboration with Poland within the EURuralis.....	70
4.4 DUTCH VISION OF THE EURURALIS UTILIZATION.....	71
4.5 FUTURE OF THE EURURALIS PROJECT.....	72
4.6 CO-PRODUCTION MODEL IN THE EURURALIS?.....	72
CHAPTER 5 ANALYTICAL CONSIDERATIONS.....	75
5.1 DIFFERENCES BETWEEN MODELS OF CO-PRODUCTION IN POLISH RURAL DEVELOPMENT PRACTICE AND IN THE EURURALIS.....	75
More differences in co-production?.....	78
5.3 MEDIATORS.....	80
5.4 CONCERN BEHIND ENVIRONMENTAL KNOWLEDGE.....	81
5.2 DOES THE EURURALIS FIT OR MISFIT INTO THE POLISH RURAL DEVELOPMENT INSTITUTIONAL SETTING?.....	82
CHAPTER 6 CONCLUSIONS & RECOMMENDATIONS.....	85
Research question 1.....	85
Research question 2.....	86
Characteristics of intermediate co-production.....	89
Research question 3.....	90
Research question 4.....	91
Research questions 5 (a and b) - RECOMMENDATIONS.....	92
Lessons to be learned.....	95
<i>General recommendations for policymakers that may contribute to improvement of relation with scientists and knowledge utilization.....</i>	<i>97</i>
BIBLIOGRAPHY.....	99
APPENDICES.....	103

<i>Appendix 1 - List of research interviewees</i>	<i>105</i>
<i>Appendix 2 - List of scientific institutions involved in preparation of Rural Development documents</i>	<i>107</i>
<i>Description of the Institution supervised by the Ministry of Agriculture and Rural Development</i>	<i>108</i>

List of Tables and Figures

Figures

Figure 1. Separate steps towards the achievement of research final goal.

Figure 2. Knowledge utilization in models of relation.

Figure 3. Stages of Co-production in the EUruralis.

Tables

Table 1. The characteristics of two models of relation between policymakers and scientists.

Table 2. Forms of knowledge utilization.

Table 3. Stages of knowledge utilization by Knott and Wildavsky (1980).

Table 4. The EUruralis indicators.

Table 5. The EUruralis meta-indicators.

Table 6. Differences in models of relation with regard to stages of knowledge utilization of Knott and Wildavsky (1980).

Table 7. Forms of knowledge utilized by policymakers.

Table 8. The characteristics of the intermediate co-production.

Table 9. Differences in co-production models.

Table 10. The plan of the workshop.

List of Acronyms

CAP	Common Agricultural Policy
DG AGRI	Directorate-General for Agriculture and Rural Development
ERDN	European Rural Development Network
EU	European Union
LEI	Agricultural Economics Institute in The Netherlands
LNV	Dutch Ministry of Agriculture, Nature and Food Quality
MARD	Polish Ministry of Agriculture and Rural Development
NAP	National Agri-environmental Plan
NSP	National Strategic Plan
RDP 2004-2006	Rural Development Plan for Poland 2004-2006
RDP 2007-2013	Rural Development Programme for Poland 2007-2013
RIVM	Environmental Assessment Agency in The Netherlands
UGFP	Usual Good Farming Practice

Chapter 1 Introduction

1.1 Introduction of the field of the study

Poland is a country situated in Central Europe with the total area of 312 685 km², of which 168 000 km² (i.e. 54%) is used for agriculture and a further 89 000 km² (i.e. 28.5%) is covered with forests. The total population is 38.15 million inhabitants (Homepage of Central Statistical Office, 2007); of which the working population represents 13.5 million persons. 16,87% of the working population is employed in agriculture, hunting and forestry sectors (Homepage of Central Statistical Office, 2007). The rural population represents 38.2% of the total. With regard to this data, it is becoming clear why rural development is an important aspect of country development. Nevertheless, it is certain that major problems regarding rural development still need to be faced.

The main problems include excessive employment in agriculture, fragmented farms structure, poor education, poor access to financial services, an insufficient competitive processing sector and an underdeveloped rural infrastructure. These problems result from communist regime that lasted in Poland until 1989. This year - 1989 was a turning point, in which the political and economical revolution took place in Central and Eastern Europe. The revolution coincided with a shift in agricultural policy patterns concerning the goals of the European Community and other industrialized countries. Despite maintaining the expensive Common Agriculture Policy (CAP) in the European Union (EU), in the 1980s, incomes in agriculture were lower than in other sectors moreover, incomes were different in regions. Further enlargements of the EU deepened these divergences. Hence, at the end of the 1980s, a need for radical change appeared for major paradigms of rural development. This led to the CAP reform proposed by Mac Sharry in 1992.

Since 1989, Polish rural policy, and thus rural development, has overcome many changes such as price liberalisation, opening up of the national economy, removal of state subsidies for agricultural and food products, establishments of major institutions responsible for government agricultural policy and finally, adjustment of policy in order to join the EU in 2004.

At present, with the financial support from the EU, the transformation of rural areas has been continued. The EU is co-financing the investments in agriculture and its environment together with the realization of comprehensive agri-environmental programmes - the subsidies for farmers who implement environmentally-friendly methods of production. These instruments aim at stimulating multifunctional

development of rural areas, restructuring and modernizing agriculture. However, the efficiency of their implementation and consequently the capabilities of absorbing huge EU-financial transfers heavily depend on effective functioning of Polish institutions and administration. Effective functioning of institutions and administration may lead to wise and deliberate policy. The policy should be supported with scientific evidence and knowledge, “it is generally believed that good policy is based on robust scientific basis” (Turnhout, 2003). Therefore, there is a need for research where the utilization of scientific evidence and knowledge by Polish rural development policymakers can be analyzed. There is also a need for investigation of relations between policymakers and scientists in order to advance the current policymaking practice for better stimulation of suitable and sustainable rural development in Poland.

1.2 Problem Statement

Policymakers on the European level and on national level “are very apprehensive about future of rural areas in Europe” (Klijn, Vullings, (Eds.), 2005). The territory of the EU is primarily rural - rural areas occupy 80% of the total European areas (Klijn, Vullings, (Eds.), 2005). These areas are certainly vulnerable to “the multitude of transformation processes set in motion by interacting driving forces of various origin” (Klijn, Vullings, (Eds.), 2005) such as two recent enlargement of the European Union, the ongoing world trade liberalization, demographic changes and climate changes. These long-term and large scale processes embody threats as well as opportunities for economical, ecological and socio-cultural growth of rural areas and their communities. Therefore, the policymakers need to be informed on what is happening, what will or could happen and what could be done to minimize risk and activate prosperous developments (Klijn, Vullings, (Eds.), 2005). The role of science is to deliver conceptual data and contribute to the proper operation of the government by efficient application of knowledge and implementation of the policies. “Science is the best knowledge we have of how the world works. Thus it is wholly understandable that scientists will be important providers of advice for governments and policymakers” (Yearley, 2005).

On that foundation, the EUruralis project, a scenario study on Europe’s Rural Area, has been developed by scientists from Working Group of Sustainable Development and System Innovation, Wageningen University and Research (in Dutch: Werkgroep Duurzame Ontwikkeling en Systeminnovatie = DOS). The EUruralis project has been designed to provide policymakers from EU-27 with possible

directions for future developments in the Europe's rural areas. These developments will affect also Polish rural development; therefore, there is an interest of Polish policymakers and scientists in the EUruralis project.

In connection with the above idea, there are two major phases of this thesis. The first phase identifies and analyzes the current relation between Polish rural development policymakers and scientists as well as the usage of knowledge by Polish rural development policymakers. The second phase targets at analyzing how EUruralis project can be employed in rural development practice in Poland, what should be done to have an introduction of the project and how it can contribute to rural development policy in Poland.

1.2.1 Research objective

The focus of my research is directed toward rural development in Poland and the EUruralis project. My choice was inspired by my work experience and thus easier access to the needed information.

The history of my work experience can be traced back to my internship, which I had to do as a part of my study at Warsaw Agriculture University at Interfaculty Department of Environmental Protection. I have undergone my practical training in the summer 2004 in the Polish Ministry of Agriculture and Rural Development (MARD) in the Department of Rural Development. After the summer, I extended the internship, which resulted in obtaining a proposal for a part time job. I worked this job from November 2004 through February 2006 as well as during the summer 2006. During my work, I took part in several trainings concerning measures under "Rural Development Plan for Poland for the years 2004-2006" (RDP 2004-2006) such as workshops regarding Early Retirement, Agro-environmental, Less Favoured Areas and Afforestation measures. Moreover, I was responsible for the office services and organization of working meetings including international conference entitled "Future of Rural Development in Europe." On this conference I met the EUruralis Team for the first time.

In March 2006 I stopped working for Polish Ministry due to taking part in the Erasmus Programme exchange from Warsaw Agricultural University to Wageningen University in The Netherlands. While staying at Wageningen I completed a part time internship period at Alterra Wageningen University and Research, in the Landscape Department in the Land Use Dynamics team. During this internship I have been working on the EUruralis project for which I analyzed the Less Favoured Area part.

I came back to Poland for the summer 2006 and worked again in the MARD for the new Department of Analysing and Programming, which was created after structural changes in the Ministry. During these two months my responsibilities were to coordinate groups to prepare the “Rural Development Programme 2007-2013” (RDP 2007-2013) and collaborate with Dutch Ministry of Agriculture, Nature and Food Quality with relation to the EUruralis project.

On the basis of the information gathered during all my working periods my general interest appeared to be about the role of science in policy process, relation between policymakers and scientists, how scientific evidences and knowledge are used by rural policymakers in Poland and the EUruralis project itself. This interest encouraged me to choose these areas for my thesis and results in formulating the problem description and research objective.

Therefore, the final objectives of this thesis are:

- gaining insight into policy – science relation in rural development in Poland and how knowledge is used in rural policymaking
- formulating recommendations for policymakers on how to introduce and apply the EUruralis project in rural development practice in Poland as well as how to improve both the process of knowledge production and utilization.

In order to achieve the final goals, separate [steps](#) are presented below.

[Step 1](#) is to investigate the present relation between policymakers and scientists within rural development policy in Poland

[Step 2](#) is to investigate how the Polish rural development policymakers utilize scientific knowledge

[Step 3](#) is to analyse the EUruralis project:

- which model of relation dominates in the EUruralis
- directions for the project utilization

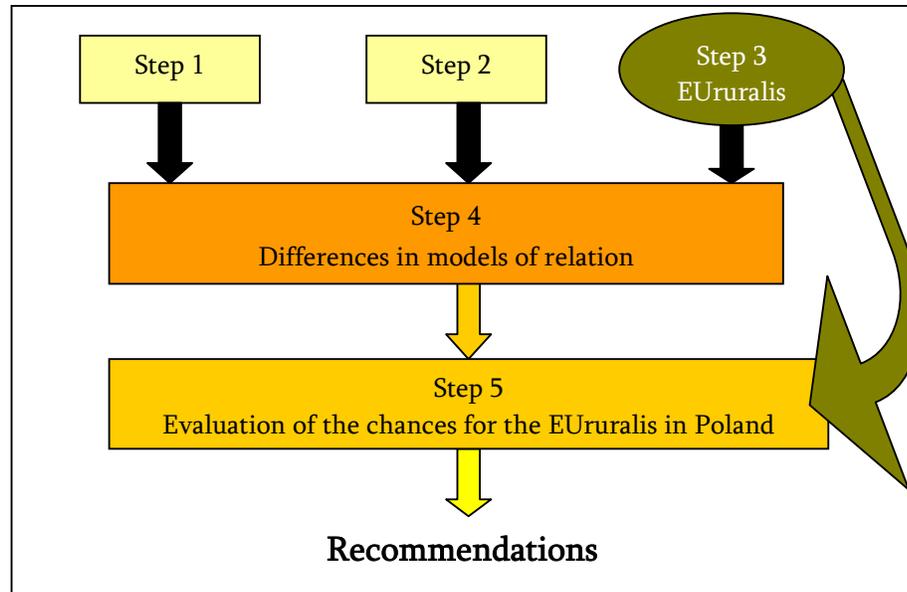
[Step 4](#) is to point differences between models of relation in the EUruralis project and current practice of polish rural development policymakers to evaluate chances for the EUruralis development in Poland

[Step 5](#) is to analyse how the EUruralis project can be applied in current rural development practice in Poland

- proposal on how to introduce the EUruralis to rural development policymakers
- evaluation of the project contribution to rural development practice in Poland

[Step 6](#) is to formulate recommendations for policymakers on how to introduce and apply the EUruralis project in rural development practice in Poland as well as how to improve the process of knowledge production and utilization.

Figure 1. Separate steps towards the achievement of research final goal.



1.2.2 Research questions

Hereby, the final research question related to Step 6 is presented.

What are the recommendations for policymakers on how to introduce and apply the EUruralis project in the rural development practice in Poland and how to improve the process of knowledge production and knowledge utilization?

To give a complete answer to the question, the following specific research questions have been formulated, which are related to the steps presented in research objective.

1. *What is the model of relation between Polish rural development policymakers and scientists at present?*
2. *How do Polish rural development policymakers utilize scientific knowledge?*
3. *What kind of policymaker-scientist relation does the EUruralis project promote?*
4. *What are the differences between models of relation in the rural development practice in Poland and in the EUruralis project?*

5. A. How can the EUruralis be introduced and applied in the Polish rural development practice?

B. How can the EUruralis contribute to the Polish rural development practice?

1.3 Research methodology

1.3.1 Research units and observation units

The research unit (this is a phenomena one wants to develop full understanding for) is a relationship between policymakers and scientists as well as the utilization of knowledge. The observation units (this is a source one gathers information from) are rural development policymakers and scientists from Poland as well as policymakers and scientists working for the EUruralis project. Furthermore, literature and policy documents can be also seen as observation units.

Definition of rural development policymakers

Civil servants that were/are working on the following documents/programmes in the Ministry of Agriculture and Rural Development in Poland:

- Rural development Programme 2007-2013, that is being prepared according to the Council regulations (EC) No 1290/2005 and (EC) No 1609/2005
- Rural development Plan for Poland 2004-2006, formulated according to the Council regulation (EC) No 1257/1999
- SAPARD¹ Programme, established according to the Council regulation (EC) No 1268/99
- PHARE² Programme in agriculture after 2002/2003

Definition of scientists

Scientists, who were/are working in respect to above documents/programmes through preparing reports concerning agriculture, agricultural market, agricultural society, agricultural economy and natural environment in rural areas and whose reports were/are delivered to rural development policymakers. These scientists are either representatives of Polish Institutes that are supervised by the MARD or work for Polish Academy of Science, Agricultural Universities and other non-governmental organizations.

Scientists working for the EUruralis project represent scientific units in The Netherlands such as Wageningen University and Alterra Research, Agricultural Economics Institute (LEI), Environmental Assessment Agency (RIVM)

¹ SAPARD - Special Accession Programme for Agriculture and Rural Development

² PHARE - Poland and Hungary: Assistance for Restructuring their Economies

Policymakers working for the EUruralis project represent the Ministry of Agriculture, Nature and Food Quality (LNV) in The Netherlands.

1.3.2 Case study

A case study is a type of research to gather deep and “full understanding of one or a few phenomena that are in the bounded context of time, place, event etc.”³ A basic characteristic of a case study is a relatively small number of observation units and a development of understanding of a research phenomenon by using interviews and participant observation as methods of data generation. Research, in general, can be based either on single case study where only one case is investigated or on multiple case studies (Punch, 2005). Nevertheless, this research opts for single instrumental case study in order to gain insight:

- in the phenomena of relation between policymakers and scientists within rural development policy in Poland
- in the phenomena of knowledge utilization by Polish rural development policymakers
- in the phenomena of developing the EUruralis in the rural development practice in Poland

In the research multiple methods of data generation are used. They include literature and documents study as well as interviews and participant observation. Therefore, the triangulation of sources and methods is guaranteed. The internal validity of the research (internal validity means the extent, to which the conclusions drawn about the studied cases are true)⁴ is protected by triangulation. The external validity (external validity means the extent, to which it is plausible that the conclusions about the study might be generalized to other situations than the situation reached)⁵ is high only within the rural development network. The theoretical generalization in this thesis (suggesting the new ideas about the studied issues) is reachable.

1.3.3 Interviewing

The interview is one of the main data collection tool in qualitative research, such as a case study. “It is a very good way of accessing people’s perceptions, meanings, and definitions of situations and constructions of reality. It is also one of the most powerful ways we have of understanding others” (Punch, 2005).

³ Handouts of the course ‘Research Methods in Environmental Sciences’, September, 2006. Wageningen University.

⁴ idem

⁵ idem

In the research the interviews of the observation units have been conducted to gather the information. The interviewees have been selected according to purposeful sampling strategies. Due to different observation units the conducted interviews were not-standardised (each respondent got different questions), however, all interviewees were asked to present their opinions about the role of science in policymaking process. The interviews were held in Polish and English. The list of interviewees is presented in appendix 1.

1.3.4 Participant observation

Participant observation is also a central tool of data generation technique. It requires from the researcher to change from the detached observer of the situation to both participant and observer of the situation” (Punch, 2005).

In the research, I used the gathered work experience from participation in meetings where I was an “observer as participant” (Punch, 2005). The meetings had been conducted in the Polish Ministry of Agriculture and Rural Development as well as in Alterra Research with the EUruralis team.

1.4 Outline of the thesis

This study report is organized into 6 chapters. Chapter 1 is an introduction, which consists of general information including research objective, research questions and research methodology.

Chapter 2 discusses the theoretical framework of this study. It introduces the main concepts used in the research in order to construct a conceptual frame. The chapter starts with a literature review on the relation between policymakers and scientists by presenting two types of models. The first model - ‘Knowledge Production’ poses unidirectional and logical flow of knowledge from scientists straight to policymakers whereas the second one - ‘Co-production of Knowledge’ is based on participation and interactions between these two groups. Furthermore, the forms of knowledge utilization are described as well as the relation of knowledge utilization to knowledge production within the two described models.

Chapter 3 gives an overview on what rural policy in Poland has looked like during the last couple of years. It presents forms of knowledge utilization by Polish policymakers as well as the relations between the MARD and scientific units. This chapter ends with the reflection of the Polish policymakers and scientists about the role of science in the rural development policy in Poland.

Chapter 4 provides general information about the EUruralis in terms of both core concepts and models applied in the project. It also describes the model of relation

between scientists and policymakers inside the EUruralis. Additionally, opinions of Polish rural development policymakers and scientists about the project are presented. This chapter tells the story about cooperation between Dutch and Polish policymakers and scientists within the EUruralis project and indicates its possible application.

Chapter 5 includes analytical considerations, where the comparison between models of relation in the EUruralis and in the rural development practice in Poland can be read. It also considers the role of mediators in policymaking process as well as the role of environmental knowledge in the Polish rural development policy. This chapter ends with answering the question whether the EUruralis fit into the Polish institutional setting.

Chapter 6 presents condense results by answering the research questions step by step.

Chapter 2 Theoretical framework

2.1 Models of relation between policymakers and scientists

Who are the scientists? There are many definitions, yet one says, “A scientist is an expert in at least one area of science who uses the scientific method to do research, which William Whewell coined the word in 1833 at the request of the poet Coleridge. Before that, scientists were termed ‘natural philosophers’ or ‘men of science.’ Scientists are motivated, often from childhood, by a desire to understand why the world is as we see it and how it came to be. They exhibit a strong curiosity about nature. Recognition by their peers and prestige are usually second motivations. Science and technology have continually modified human existence, and the activity of scientists is today widely known” (Homepage of Dictionary.com, 2007).

Who are policymakers? Definitions of “policymakers” are mean in words and say only that “policymakers set the plan pursued by a government or business etc” (Homepage of die.net, 2007). To have complete descriptions, some characteristics can be added. While scientists seem to be interested in looking for evidences and truth, policymakers are finders of opportunities concerning how to put issues in the agenda that compliment their beliefs or present interests of their bosses. Within the scientific process “assessment through peer review is considered to be main feature, whereas policy process has been characterized as bargaining and voting” (Turnhout 2003). Scientists are rather critical whereas policymakers seem to be more conservative and avoid risks. Therefore, the question arises whether scientists and policymakers have to interact and why. Yearley (2005) gives an answer to this question, “Science is the best knowledge we have of how the world works. Thus it is wholly understandable that scientists will be important providers of advices for governments and policymakers”. Nevertheless, what kind of relation can scientists and policymakers have?

Van de Peppel and Herweijer (1994) define two kinds of communicative relations: one-sided and two-sided. One-sided relation involves one-way flow of information. It assumes unidirectional and logical flow of knowledge from scientists straight to policymakers. This interplay is called ‘knowledge production model’, where “new knowledge is being produced primarily within individual disciplines” (Geuna, 2003), mostly by academic institutes and universities. At the end, the outcomes of research are transferred to users who might or might not take benefit of particular study due to insignificant and very little connection to social needs.

Policymakers in this model remain passive, they do not participate in process of knowledge production, they are not interested in what is being produced, they do not ask for scientific reports and they do not ask for explanations concerning the results.

Thus, this model is based on the unilateral relation between scientists and policymakers. Gibbons (1994) stresses that in this homogenous model, problems are set and solved in a context governed by the largely academic interests of a specific community. Scientists do research about things they perceive as urgent and problematic. However, it does not necessarily have to fit to policy agenda, therefore, many studies may stay unused.

This model distinguishes two different worlds, a world of science and a world of policy, which do not really have any connections. Although, it is believed that there are some formal and informal interactions between policymakers and scientists, they seem to be too weak to bridge these two environments.

Two-sided relationship performs with more interactive vision. Contemporary authors recognize the shift from one-sided to two-sided relation, where rather than producing knowledge and trying to figure out how the policymakers use this knowledge; the research community is more open to involve users into the process of knowledge production. In general, this model involves “multidisciplinary research” (Geuna, 2003) carried out in a wide range of institutions, where the boundaries between traditional sectors and between science and society are flexible. The process of knowledge production is heterogeneous “in terms of skills and experience people bring to it” (Gibbons, 1994). Knowledge is produced “in the context of application” (Geuna, 2003), that means according to societal demands.

Some authors, like Sheila Jasanoff, visualize two-sided relation as ‘co-production of knowledge’ (Jasanoff, 1996, 2006). Jasanoff claims that co-production model is strongly opposed to linear model of knowledge production. Co-production of knowledge involves at least two parties: expert service providers and the clients. In the case of this study, the expert service providers are scientists who represent different institutions such as scientific units, NGOs, business companies. The clients are, in majority, civil servants.

Gallouj & Weinstein (1997) consider co-production as essentially organizational, extensive and balanced interplay. They define co-production as the ‘joint effort’, by which the service provider and client produce the service. In order to organize a solution that fits the client’s situation, the provider must present specific knowledge that fits the client specific needs and combine it successfully with the client’s

knowledge base (Hertog, 2002). Furthermore, accurate observations are presented by Haas (1992), who postulates that although policymakers are sometimes passive consumers of scientific knowledge, they cooperate with scientists to produce knowledge for policy and “the resulting networks of academics and policy participationers may be seen as epistemic community” (Haas, 1992). Haas defines ‘epistemic community’ as “network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy relevant knowledge within that domain or issue area.” ‘Epistemic community’ shares a common set of norms, problems, beliefs and rationale for their work. Interactions, discussions and negotiations inside ‘epistemic community’ concern application of research in decision making process and consensus about goals between policymakers and researchers, as Weiss (1979) assumed in her problem-solving model. Additionally, the main assumption of ‘epistemic community’ approach is that “members of such communities are able to come to agreed analyses of issues or problems with a particular degree of independence from their political bosses” (Haas, 1992). Accordingly, these expert communities control over knowledge and information grants them independent power in shaping and coordinating international agreements” (Yearley, 2005). Moreover, it seems that scientists within these specializes groups would be expected to come to agreement much more readily than do national political representatives and hence, ‘epistemic community’ generates more leadership and influence on the strength of their professional agreements.

The co-production of knowledge model is considered as a chance for both parties (scientists and policymakers) to manage discussions through the use of internal and external sources and through relationships that are both formal and informal. Co-production involves multi-way flow of information between different stakeholders, like between scientists and representatives from NGOs, scientists and farmers associations, policymakers and farmers advisors etc. Co-producers exchange information in various ways: on formal and informal meetings, by phone, mail, accidental appointments. These transactions increase the learning process and contribute to trust building as well as capabilities towards new services.

Nonetheless, within the co-production model failure to transfer knowledge has been addressed to ‘two communities’ problem. ‘Two communities’ concept poses that a cultural gap between policymakers and researchers leads to lack of understanding between them and constitutes a barrier for engagement (Caplan, 1979). Two factors are mentioned by scientists in order to minimize cultural differences, and these are:

adaptation of the research products and the acquisition efforts. In relation to adaptation of the research products several authors have mentioned that policymakers definitely prefer to read reports when they are presented in a language they can understand. As a result researchers are asked to make their works more readable with more specific conclusions and recommendations. In relation to second factor – to acquisition effort - it is said that professionals need to make effort “by engaging resources in the acquisition of knowledge” (Amara, Ouimet, Landry, 2004) by organizing meetings and workshops to “discuss the subjects and scope of researchers, to discuss results with researchers and to acquire research results from researchers” (Amara, Ouimet, Landry, 2004).

To highlight that, these interactive approaches, like the just mentioned co-production, might be difficult to achieve; possible problems are pointed out. To begin, it is not always simple to recognize scientific knowledge in terms of knowledge specifically produced for policy and the knowledge that was not produced for policymakers. Furthermore, the need for knowledge in policy may be described as a ‘said knowledge’, “which was framed in a fashion that allows it to be easily integrated into the cognitive frames in policy” (Jacob, 2006). Lastly, the more one uses the term interactive, co-production or mutual interplay, the easier it can be seduced into believing that one has presented actual explanation of nature of utilization. In fact, one has merely mentioned that the relationships between scientists and policymakers are close. Furthermore, policymakers and researchers have often various needs with respect to knowledge, so even if policymakers benefit from researchers, this usage may not fit to the criteria of knowledge utilization. As a consequence, civil servants employ a concept borrowed from research only at the rhetorical level.

To sum up these two models of relation, the table with main features of each model is presented below.

Table 1. The characteristics of two models of relation between policymakers and scientists.

CHARACTERISTIC	Model 1 – Knowledge Production	Model 2 – Co-production of knowledge
Relation	Unilateral	Open relation and users involvement and participation in the process of knowledge production
Interactions	Weak formal and informal interactions between two separate worlds	Many formal, informal interactions focused around knowledge production, negotiations, trust building, consensus, common events
Flow of information	One-way flow of information from scientists to policymakers	Multi-way flow of information between different stakeholders, spreading the scientific knowledge
Knowledge production	<ul style="list-style-type: none"> - Knowledge is being produced by scientists - Diciplinarity - Homogenity – problems are set and solved in a context governed by the largely academic interests of a specific community 	<ul style="list-style-type: none"> - Transdisciplinarity (which means that a diverse range of specialists work in teams on problems in a complex applications oriented environment) - Heterogenity (which means incorporating people’s skills and experience into the process of knowledge production) - Engagement of all stakeholders -Trials to reach agreement on goals and objectives of the final product
Usefulness and utilization of research	Low	High
Producers	Academic institutes, universities	Range variety of actors from professionals and scientists to governmental and non-governmental stakeholders
Behaviour of policymakers	Passive, policymakers do not participate in process of knowledge production, do not ask for research and are not interested in what is being produced	Active, policymakers ask many research questions to scientists, ask for explanations of scientific results if necessary

2.2 Concept of knowledge utilization

The usage of knowledge by governmental actors is based on the assumption that “informing decisions with research findings is likely to help eliminate inefficient uses of resources or wrong decisions” (Landry, Lamari, Amara, 2003). However, the real impact of research in policy and vice versa is extremely difficult to trace. There are numbers of various schools in social sciences, which “have either advocated or attempted to trace knowledge uptake in policy” (Jacob, 2006). According to authors who deal with knowledge utilization concept “research can and should be the fundament of social policy” (Jacob, 2006). As a result, questions appear which this research addresses: how do policymakers use research results and how can it be measured? The answer to this question is presented in a summary of a literature study below, where various forms of knowledge utilization will be introduced as well as the one example of measurement of research utilization.

Forms of knowledge utilization

There are several concepts that describe how policymakers may utilize research results. Weiss (1979) presents the idea of ‘knowledge driven’ and defines it as “linear model”. Basic research precedes development and application. ‘Knowledge driven’ assumes “that the very existence of knowledge implies its eventual use”. Weiss points out that this model is derived from and mostly used in natural sciences. Furthermore, Weiss (1979) describes additional models, all policy-oriented: enlightenment, tactical and political. In the enlightenment model, users of research cannot pinpoint a specific study or group of studies on which their policies or decisions are based on. However, “research sensitizes decision makers to new issues and helps turn what were non-problems into policy problems” (Weiss, 1979). It is important to mention that this model includes some generalizations. Weiss (1979) says that incomplete, inadequate, oversimplified and wrong findings often seep into the ground waters of knowledge along with the quality of research studies. Sometimes the filtering process is so long that the research results may be out of date by the time they arrive or they may never reach the policymaker. Additionally, “as more studies are done, they often elaborate rather than simplify. They generate complex, varied and even contradictory views of the social phenomena under study, rather than cumulating into sharper and more coherent explanations” (Weiss, 1979). The tactical model Weiss (1979) defines as, “research, which is used only for purposes that have nothing to do with the content or findings of the research

because research is deployed as a tool to show that action is being taken". Under this model, policymakers use the fact that they are sponsoring the research to show responsiveness and excuse for their delayed actions in terms of waiting for the research results. Policymakers may also use research to swerve criticism for unpopular policy outcomes.

The political model of Weiss (1979) says that "knowledge is used as a legitimating argument for policy decisions made for other reasons or knowledge is used to undermine the particular position." In this model the policymakers take advantage of research to support their predetermined position. "When research is available to all participants in the policy process, research as political ammunition can be a worthy model of utilization" (Weiss, 1979).

A different perspective presents Beyer (1997), who in his essay summarizes three types of research use: "Research on the utilization of research findings has revealed three types of use: instrumental, conceptual, and symbolic. Instrumental use involves applying research results in specific, direct ways. Conceptual use involves using research results for general enlightenment; results influence actions but more indirectly and less specifically than in instrumental use. Symbolic use involves using research results to legitimate and sustain predetermined positions." These three types of research were studied in terms of frequency of use and their influence on events by some scientists. Instrumental use was presented also by Albaek (1995). According to him, instrumental use of the research is addressed to solve predefined problems in the actual existence of the rational decision making process. Nevertheless, the instrumental view has general been rejected due to lack of validity. The study made by Caplan, Morrison, and Stambaugh (1975) on the utilization of social science knowledge in policy decisions at the U.S. level showed that only 40% use of knowledge was instrumental. Such results proved that research evidence leads only occasionally to concrete impact on policy decisions. While considering the conceptual use of research, the role of the research is referring to garbage-can model. This model says that decision making can be anarchic and unpredictable and that "problems, solutions choices and opportunities are conceptually separated from the actors in an organization, and can be analyzed independently of them" (Albeak, 1995). As a result, decision making process is not always guided in the way the policymakers really want. In relation to the garbage-can model the knowledge then is used in a diffuse and indirect way rather than in an instrumental concrete way. According to the study of Caplan, Morrison, and Stambaugh (1975) conceptual approach is used more often in governmental agencies

than instrumental ones, so it is more applicable. Bayer (1997) mentioned also symbolic use of research, which is for confirming programmes, which policymakers wish to promote. Symbolic use of information “reflects bad use of knowledge, while instrumental and conceptual use reflects distinct but nevertheless ‘good’ applications of information” (Souchon, A. and A. Dianmantopoulous, 1994). Symbolic use of research exists mutually with instrumental and conceptual uses.

Jasanoff (2006) introduces co-production model as an important value – “it may encourage to more fruitful dialogue,” and at the same time “co-production” offers new ways of thinking, where the role of knowledge, expertise, technical practices and material objects is highlighted.

The forms of knowledge utilization mentioned by different authors are described in short in the table below.

Table 2. Forms of knowledge utilization.

Forms of knowledge utilization	Who introduces	Description
KNOWLEDGE DRIVEN	Weiss (1979)	Liner model where basic research precedes development and application. Existence of knowledge implies its eventual use.
ENLIGHTENMENT		Knowledge shapes views
TACTICAL		Knowledge is deployed as a tool to show that action is being taken
POLITICAL		Knowledge is used to undermine the particular position
INSTRUMENTAL	Beyer (1997)	Knowledge is used to solve predefined problems in the actual existence
CONCEPTUAL		Knowledge is used to generate and idea or concept
SYMBOLIC		Knowledge is used to legitimate and sustain predetermined position
ENCOURAGEMENT	Jasanoff (2006)	Knowledge is used as encouragement to fruitful dialogue among all involved stakeholders
NEW THINKING		Knowledge offers new ways of thinking

How to measure utilization?

Is it possible to measure knowledge utilization? Over the years, many scales and indices have been designed to measure it (Landry, Lamari, Amara, 2003). Knott and Wildavsky (1980) present one of the few scales that conceptualize knowledge utilization as a process through different stages. The stages are “meant not only to capture the extent to which information is processed cognitively by the policymakers but also its consequence in the policy process” (Landry, Lamari, Amara, 2003). This scale includes six stages: reception, cognition, discussion, reference, effort and influence. The scale is collective “in the sense that cognition builds on reception, discussion on cognition, reference on discussion, effort on reference, and influence on effort” (Landry, Lamari, Amara, 2003). The table below presents the description of knowledge usage in different stages.

Table 3. Stages of knowledge utilization by Knott and Wildavsky (1980).

	Name of the stage	Description from the perspective of policymaker
Stage 1	Reception	I received the university research pertinent to my work
Stage 2	Cognition	I read and understood the university research that I received
Stage 3	Discussion	I participated in meetings for discussion and popularization of the aforementioned university research
Stage 4	Reference	I cited university research studies as reference in my own professional reports or documents
Stage 5	Effort	I made effort to favour the use of university research result
Stage 6	Influence	University research result influenced decisions in policymaker administrative unit

2.3 Linkage between knowledge production and utilization

Knowledge utilization heavily depends on knowledge production. Heterogeneity, transdisciplinarity and involvement of users into the process of production improve the level of knowledge usage. “It is now one of the axioms of research policy that the involvement of potential recipients of knowledge in its production will increase the frequency of interactions and the likelihood of utilization” (Jacob, 2006).

Landry, Lamari and Amara (2003) emphasise that the knowledge utilization depends on irregular interactions between policymakers and scientists within the knowledge production process, rather than on linear sequence beginning with the needs of researchers or the needs of users. They call it interaction explanation. The adherents

of this theory claim that “the more sustained and intense the interactions between researchers and users, the more likely utilization will occur” (Landry, Lamari, Amara, 2003). Hence, in the knowledge production model, lack of interactions between researchers and their potential users has been recognized as the main problem in underutilizing scientific knowledge.

Existing interactions, both inside and outside the process of knowledge co-production, may influence the process of research utilization during stages presented in the scale of Knott and Wildavsky (1980). Policymakers will receive reports pertinent to their work if they discussed the scope of the research with scientists before. Governmental actors “prefer research focused on users needs rather than research focused on advancement of scholarly knowledge.” “The uses of knowledge increases as users consider research pertinent, as research concedes with their needs, as users attitudes give credibility to research and as results reach users at the right time” (Landry, Lamari, Amara, 2003). Besides, policymakers prefer research findings presented in the language they can understand. It means that an expert should not forget about preferences of a future reader. The language and form of the report can be discussed and negotiated, if both policymakers and scientists want to have a good quality product that later will be fully utilized. Interrelations outside knowledge co-production might be valuable while popularization and promotion of university research to other stakeholders. The aim of co-production is to make product beneficial and functional for policymakers so as they could use it as references in their policy documents.

The way knowledge is being produced influences the way knowledge is utilized by policymakers. Presented in previous section forms of knowledge utilization can be linked with either knowledge production or knowledge co-production, as presented below.

1. Tactical and instrumental use of research in knowledge production

If policymakers do not participate in the process of production, they do not know what kind of research and why scientists conduct. Policymakers then might try to use the fact of being uninformed as an excuse of their delayed actions. They might burden scientists with lack of professionalism and lack of information about their research. As a consequence, scientists are exposed on antipathy. Moreover, many scientific reports may remain unused because they scope of the research do not fit policymakers needs.

Only occasionally research is used instrumentally, when they suit to policy agenda.

2. *Enlightenment, encouragement and concept in co-production*

When there is a wide variety of experts and policymakers involved in the process of knowledge co-production, the possibility of incomplete, inadequate, oversimplified and wrong findings (Weiss, 1979) is relatively low. Co-producers have the same rights to express opinions to certain issues and thus problems are described from different perspectives. From the policymaker point of view, it might bring new ideas and concepts for solving problems. It might also encourage to further dialogue between stakeholders.

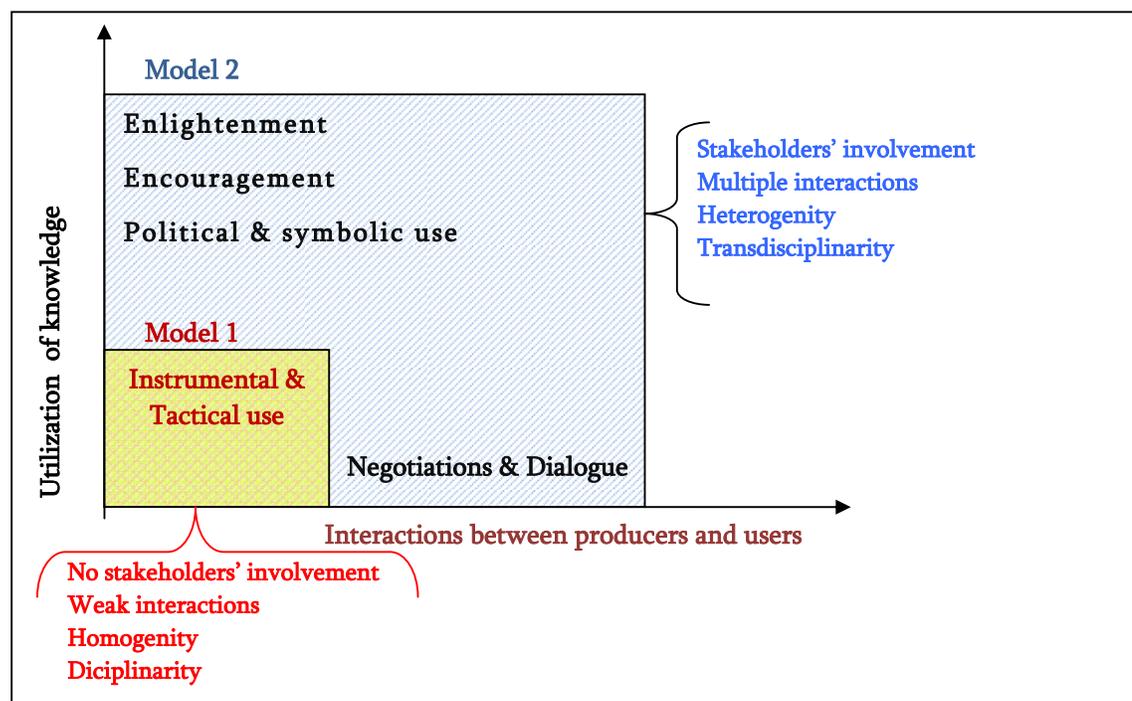
3. *Political and symbolic use in co-production*

Results of scientific research are available for all co-producers. Co-producers might take advantage of that knowledge by putting pressure on politicians and force issues into political agenda. Additionally, if there is wide variety of co-producers, it is easier to spread and promote information to the other stakeholders.

Both interactions between producers and users as well as forms of knowledge utilization can be recognized as the binders between production and utilization.

To visualize two models of knowledge relation presented in section 2.1, a simple figure is presented below, which incorporates production and utilization and their possible linkages.

Figure 2. Knowledge utilization in models of relation.



In reality, the dependencies between the knowledge production and utilization look differently because co-production and utilization are very complex processes. The boundary between influence of production and co-production on utilization is flexible. The way I classified forms of knowledge utilization to models of production may not reflect actual practice. For instance, co-production does not refer to ambiguity, which can hinder utilization of research. Ambiguity imputes to “a state of having many ways of thinking about the same circumstances or phenomena” (Zahariadis, 1999). In the article of Zahariadis a statement can be found that in “organized anarchies,” i.e., governmental organizations “ambiguity is rampant.” Ambiguity makes policymaking messy, complex and less comprehensible, it requires from experts a lot of information, so e.g., it makes difficult to recognize knowledge as enlightenment.

Furthermore, there are three properties characterizing specificity of governmental agencies that constitute a tread to co-production and knowledge utilization. Firstly, it is quite common in state administration that legislators and bureaucrats come and go especially high civil servants. Involvement in both co-production and any decision differ considerably, “and so the time and effort that participants devote” (Zahariadis, 1999). Therefore, the assumption saying that co-production assures full utilization is vague.

Secondly, co-production as a process might exist, but involved policymakers might not know what they want. “Policymakers almost never make their goals crystal clear” says Zahariadis (1999); however, time constrains sometimes force policymakers to make decisions without having precise preferences. “Time, seen as unique and scarce resource” influences utilization. According to Zahariadis, opaqueness rules decisions, thus, it is possible that opaqueness can rule utilization of research results as well.

Thirdly, although policymakers refer to research in policy documents, the process how they transfer inputs into products is not clear. Perhaps, that is the reason why utilization is so difficult to trace.

Presented above Figure 2 has been made only from the theoretical perspective. This research will indicate that relations between policymakers and scientists as well as process of co-production and utilization are much more complicated. It will show that although there are certain characteristics of co-production model such as intense interactions between policymakers and scientists concerning the scope of research, application of the results in policy and popularization of scientific

information, co-production might look differently in various environments and has different impacts on utilization.

Chapter 3 Rural Development Practice in Poland

3.1 Agricultural diary

Past

In the period from 1775 through 1918, Poland disappeared from the map of Europe because the territory of the country was partitioned among three European powers: Russia, Prussia and Austro-Hungary. Different patterns of development characterized each part of Polish territory, e.g., control under Prussian administration reached the highest level of development whereas Russia's part was completely undeveloped. Agricultural structures, technical infrastructure, settlement patterns, values and attitudes of rural population during 124 years of rules of different powers have significantly influenced Polish agriculture and rural areas. The period between world wars (1918-1939) was too short to integrate all areas separated earlier.

A new order after Second World War brought Poland new borders, but the country became heavily dependent on the Soviet Union. Agricultural policy was based on establishing collective agricultural units to deliver service to private farms, expanding the state farm sector and controlling up-stream and down-stream industries (Wilkin in Hathaway & Hathaway, 1997). The government had an impact on private farms through indirect controlling forms such as administered process, systems of rationing agricultural inputs and legal regulations e.g., regarding the size of private farms. The government provided stable economic conditions for agriculture on one hand, while on the other it restricted farm development opportunities by monopolisation of farm products purchases, pricing and rationing farms inputs. Communists regime "left farmers with deeply rooted beliefs" (Wilkin in Hathaway & Hathaway, 1997) that, "it is the responsibility of the State to keep agricultural process at the same level, all products have to be purchased through the procurement system and farmers well-being depends on the agricultural policy of government" (Wilkin in Hathaway & Hathaway, 1997).

The radical political and economic changes in Poland in 1989, which occurred due to collapse of communist regime, have challenged the agriculture and rural policies. Introduction of the democratic system, as well as market economy, initiated a number of political decisions and opened up new perspectives for the Polish society in terms of improvement of leaving standards in the welfare of European Community. Unfortunately, not all the inhabitants of Poland could benefit from the

market economy. In the beginning of 1990, all investments and revenues were concentrated in the big municipal agglomerations, whereas rural areas, villages and small towns were much less developed.

From 1990 through the time present, Polish rural policy has undergone many changes through time stages. Lots of fundamental reform took place in the time period from 1989 till mid 1991 such as 1) price liberalization, 2) breaking up of trade monopolies, both domestic and foreign and 3) opening up of the national economy (Wilkin in Hathaway & Hathaway, 1997). The government took legal steps to liquidate all socialistic-state farms and reduced the support for agriculture and agro-food sector. Liberalization of the land market occurred as well as abolition of size limits for private farms. There was a lack of sectoral policy.

In the period from 1991-1994, the government introduced several protectionist measures such as high tariffs, import levies and non-tariff barriers. Moreover, the major governmental institutions responsible for policy in agriculture were established. They include the Agricultural Market Agency, Agricultural Property Agency of the State Treasury and Agency for Modernization and Restructuring of Agriculture. In 1991, Poland signed the Association Agreement with the European Communities, which results in introduction of programmes aimed at the adjustment of the Polish economy (including agriculture) to the EU conditions (PHARE and SAPARD programmes).

The governmental support for agriculture was still declining (from 3.7 percent of the state budget in 1991 to 2.5 percent of the total state budget in 1994), however, the government kept indirect subsidies in supporting the agricultural progress. Subsidies were to qualified seed, extension service, soil conservation, melioration, liming etc. The subsidies did not cover direct payments for farmers; however, subsidies for production and export were introduced.

Poland officially started negotiations for accession to the EU on the 8th of April 1994. At these times, a major problem was the agricultural sector. There was a threat that it could delay Poland's accession to the EU. "To face up the agricultural problems, the agricultural policy has been linked to the completion of the government's four-year Strategy for Poland programme, prepared by the team headed by the Deputy Prime Minister and Minister of Finance, Grzegorz Kołodko" (Wilkin in Hathaway & Hathaway, 1997). In 1994, the Ministry of Agriculture and Food Economy published the document entitled "Principles of socio-economic policies for rural areas, agriculture and food economy up to year 2000". Both of these documents embodied agriculture into a broader policy aimed at developing rural

areas. However, these activities did not bring any positive results. The structure of Polish agriculture was far away from the model of agriculture in the EU. In 1998 the employment in agriculture in Poland amounted to 27% of total amount of employees, whereas in the EU the average was 5%. The size of the Polish farm in average was a 7 ha, whereas in the EU amounted to 16 ha (Zalewski, 1998). Small farms had low productivity. Moreover, the farms were overpopulated and as a consequence the labour force could not be used fully. The next disadvantage of Polish agriculture was bad mechanization in agriculture and finally the division of agricultural production. The level of education of the rural population was low, as of 1998 only 3,2% of the rural population had a higher level of education, 53,6% had either elementary education or incomplete elementary education (Mid-term Strategy of Rural Development, MARD, 1998).

Since 1998, the support from the EU became more available, which pushed Polish government to reconstruct the agricultural policy. A successful shift from agricultural policy to rural policy was possible due to broader socio-economic policies which dealt with various aspects of rural life. More specifically, policies gathered towards improvement of social and technical infrastructure, creation of employment in the non-agricultural sectors, protection of the natural environment, introduction of housing projects suitable for the nature of rural areas and protection of the cultural heritage.

After accession to the European Union

Poland experienced great losses in population, property and territory during the Second World War. Later, it remained under the influence of the Soviet Union, who had determined directions and possibilities of economic and social development for many years. The major problems concerning many sectors include industry, transport, infrastructure, agriculture and environmental protection have not been yet solved thus a number of the EU strategies and policies are implemented. Yet the majority of Polish society view improvements positively. Urgent problems like poverty, adjustment to the cultural and social changes are difficult to obtain particularly for elderly people and rural population. After accession to the EU, the agricultural policy had to focus also on the natural environment and rural landscape, which are important aspect of the CAP.

In general, today's development of agriculture and rural areas in Poland can be divided into three directions: 1) price support and market stabilisation, 2) subsidies to the agricultural production and interest on intervention credits and 3) structural

policy for rural areas and agriculture. Price support and market stabilisation was achieved by market protection, imposing the tariffs on agricultural products and subsidies to purchase prices. Subsidies were designated to: soil protection, plant protection, biological improvement and organic farming. Subsidies for credit interests were indicted to purchase of agricultural land, management of agricultural holdings by young farmers, service for agriculture, fisheries, agri-food sector and utilization industry, restoration of holdings that were suffer from natural disasters, investments in agricultural, food processing and creation of new jobs outside agriculture. Structural changes in agriculture and rural development were specified by: macroeconomic policies aiming at economic growth rise of employment, education, reduction of poverty, maintaining production potential and production volume. The policies were determined on equal development opportunities for all regions as well as multifunctional rural development. The crucial issue was to keep policy complimentary to natural resource utilization as well as environmental protection.

Rural Development Documents

Rural development policy in Poland has been supported via pre-accession programmes: PHARE and SAPARD. At the beginning, Programme PHARE in agriculture aimed at material supplies and technical assistance in terms of advice, training, transfer of agricultural know-how and organization and management in order to spread the principles of market economy. Only since 1998 the PHARE Programme has become oriented “towards accession” instead of the earlier approach of “meeting needs” (Rural Development Plan for Poland 2004-2006, Ministry of Agriculture and Rural Development, March 2005). Since 1998 the programme had been divided into 3 parts:

1. Institution Building – aimed at adjusting government and local authorities to requirements of the EU
2. Social and Economic Cohesion – aimed at: reduction discrepancies in regional development, contribution to social and economic cohesion and preparation and implementation of operational programmes co-financed by structural funds of the European Regional Development Fund and European Social Fund.

3. PHARE Cross-Border Cooperation Programme (CBC) aimed at promoting the cooperation between border regions and the neighbouring regions of the EU Member States

SAPARD Operational Programme was established according to the Council Regulation (EC) 1268/99. SAPARD operational programme came into force in July 2002 and included 7 measures. The proprieties of the programme were based on the analysis of the situation in the rural areas in Poland and in agri-food sector. The general goals of SAPARD operational programme was to improve the competitiveness of Polish agri-food sector, adjust the agri-food sector to safety, hygiene, food quality and environmental standards and stimulate the multifunctional development of rural areas by supporting the development of technical infrastructure and activities outside agriculture.

Since Poland accessed the EU on the 1st of May 2004, programmes have been executed that address farmers and small enterprises. These programmes aim at equalizing opportunities for all farmers and group of farmers by providing subsidies to those who need them most.

In May 2004, the “Rural Development Plan for Poland 2004-2006” (RDP 2004-2006) came into force. The Plan consists of nine measures such as Early retirement, Support for semi-subsistence farms undergoing restructuring, Support for less-favoured areas (LFA), Support for agri-environment and animal welfare, Afforestation of agricultural land, Meeting the EU standards, Support for agricultural producers’ groups, Technical assistance and Complements to direct payments. The RDP 2004-2006 corresponds with the instruments finances by the Guarantee Section of the European Agriculture Guidance and Guarantee Fund (EAGGF) according to the Council Regulation (EC) No 1257/1999. Next to the RDP 2004-2006, a Sectoral Operational Programme, which is co-financed by the EAGGF, called, “The restructuring and Modernization of the Food Sector and the Development of Rural Areas,” entered into force.

All operations within both of these documents compile the Habitat and Wild Birds Directives (92/43/EEC and 79/409/EEC) and the Directive of Environmental Impact Assessment (85/337/EEC).

The RDP 2004-2006 has been replaced by a new document – the Rural Development Programme 2007-2013 (RDP 2007-2013). The support for the programming period from 2007-2013 is financed with the framework of European Agricultural Rural Development Fund (EARDF) formed on the strength of the Council Regulation (EC) No 1290/2005. The rules of funding, however, have been determined in the Council

Regulation (EC) No 1698/2005 on the 20th of September 2005. According to this regulation each Member State is obliged to work out the National Strategic Plan as a basis for the RDP 2007-2013.

In Poland, the “National Strategic Plan 2007-2013 Rural Development” (NSP) has been established. Based on the social, economic and environmental analysis as well as available statistical data, it specifies the priorities and directions of rural development in relation to European Community proprieties. The NSP constitutes groundwork for the RDP 2007-2013. The RDP 2007-2013 defines the range and form of financial support in Poland with the framework for improvement of: enterprises’ competitiveness and their modernisation, natural environment and landscape through proper land management, conditions of life quality of rural population and local communities.

3.2 Characteristics of rural areas in Poland

Agriculture in Poland is one of the most important sectors from economical perspective and its importance is grater in Poland than in other countries in the EU. It has an influence not only on the social and economic situation of the rural population but also on the natural environment, structure of the landscape and biodiversity. Nevertheless, the agricultural effect on macroeconomic indicators is relatively small and in 2004 Gross Domestic Product (GDP) per capita was PLN 24,153, and the share of agriculture in GDP was around 4,5% (National Strategic Plan 2007-2013, MARD, 2006).

Productivity in agriculture is low and constitutes 14% of this indicator in comparison to the EU-25 (Homepage of Eurostat, 2007). Low productivity results from the fragmentation of farms, unfavourable agricultural system, small economic capability of agricultural holdings, excess of labour in agriculture and finally insufficient equipment of agricultural holdings with modern machines and facilities (National Strategic Plan 2007-2013, MARD 2006). Moreover, all these factors differ among regions.

For centuries in Poland the tradition of family farms and attachment to land had been present. Family farms are predominant and some are oriented at multi-directional production. Highly specialized holdings constitute only a small percentage. The amount of the largest farms (over 20 ha) as well as the smallest farms (circa 1-5 ha) is rising as a consequence of concentration. In general the agricultural holdings can be divided into three groups: 1) farms where production has been abandoned or temporarily suspended due to economic reasons or is

continued only for own needs, 2) market-oriented farms and 3) semi-sustainable holdings that produce partially for the market.

There are more than 60 thousand rural localities, where the average size in terms of population is 277 inhabitants per one rural locality. For many localities this number does not exceed 100 persons. For that reason it is difficult to maintain their social viability. Small localities characterized with dispersed housing pattern cause increase of costs in terms of technical infrastructure, poorer accessibility to technical infrastructure, public services and educational units (National Strategic Plan 2007-2013, MARD, 2006). The inappropriate rural infrastructure comprises one of the obstacles towards multifunctional development. It lowers the standard of living and economic activity while decreasing the beauty of rural areas.

The education opportunities are limited in rural areas due to insufficient infrastructure, lack of telephone and internet networks. On that account, vocational education, low level of education and knowledge at schools dominate the rural areas. Low education might have an adverse influence on the modernisation of agriculture in terms of farm equipment, innovative technology and farmers' perceptions.

Non agricultural activities

Collapse of collective farms, which started in 1989, led to tremendous increase of unemployment in agriculture and decrease of farmers' incomes. This was a reason for development of other forms of activities and businesses, creation of new jobs and diversification of income sources for the rural population. Some non-agriculture activities are retail trade and wholesale, industrial processing, building and construction, transport and storage. One of the most profitable activities is agrotourism, which is becoming popular among the urban population. Farm tourism constitutes a new form of rural income and is still developing in Poland because of the attractive environment in rural areas. The Polish agricultural model did not use so intensively natural resources as it was practiced in the Western European countries. This model combines "moderate increase of capital-intensity of production with relatively high labour-intensity" (National Strategic Plan 2007-2013, MARD, 2006).

Natural Environment and cultural values in rural areas

There are two competing aspects of agricultural influence to the natural environment. The positive aspect is that long-lasting agriculture shapes the mosaic

and diverse landscape as well as guarantee good conditions for diversity of plants and animals. The negative aspect is that agriculture degrades to some extent the environment through excessive and irrational fertilization, non-adjusted agricultural techniques and non-compliance with good agricultural practices. The usage of nitrogen remains circa 30 kilograms per hectare, according to the Code of Good Agricultural Practice, is a satisfactory level in comparison to the average nitrogen usage in the Western European countries, where an average is 55 kilograms per hectare. This low level of nitrogen usage in Poland is caused by low level mineral fertilizers usage; however, it poses danger to water quality. Thus, the storage of artificial fertilizers is important in order to protect the water resources from agricultural contamination.

Rural landscape in Poland is fascinating with its biodiversity. It is believed that this landscape is the best preserved in the EU, on account of favourable natural conditions and unique anthropogenic influence such as: uneven industrialization and urbanization, traditional extensive farming still maintained in large areas and the existence of large old woods. Polish landscape characterises with diversity of habitats with mosaic biological structure. There are about 365 different types of plant assemblages. About 45 types of plant habitats used as meadows and pastures are situated on agricultural land.

Moreover, some of the agricultural lands that are in a neighbourhood of Nature 2000 programme need particular care.

Traditional production methods and spatial development patterns kept through today create original cultural landscape with peculiar rural architecture – complexes of traditional wooden houses, churches, chapels and commentaries, water-mills, barns. Preservation of these buildings shall contribute to the image of Polish agriculture at local and regional level.

There are some unfavourable circumstances that can endanger rural environment. Some of them have its origins in the past, for example: cultivation on poor soils and soils susceptible to erosion, inappropriate water management in agricultural catchments, lack of education with regards to agricultural practice, lack of adequate agricultural equipment and point-source heavy metal pollution of the soil. In the last couple of years the decrease in population of species of birds in farmland areas has been noticed. It seems that the biggest threat is abandoning habitats, which are of marginal importance for agriculture, simplification of landscape structure and excessive intensification of agricultural production. New threats have been recognized recently that are related to the failure of Good Agricultural Practice that

farmers need to follow in order to fulfil agri-environmental requirements. The danger refer to: 1) changes in the traditional system of plant cultivation and animal breeding, resulting from intensified agricultural production, 2) failure to cultivate grasslands, leading to the resting and overgrowth of land, which in turn courses disappearing of rare populations of birds and plants and 3) delay in the utilisation of environmentally friendly agricultural production technology (Rural Development Plan for Poland 2004-2006, MARD, 2005).

3.3 Utilization of knowledge by rural development policymakers

Policymakers are aware that science constitutes an essence in rural policymaking in two dimensions, firstly use knowledge and experience of scientists in programming⁶ policy documents secondly, to transfer the knowledge know-how to farmers through Agricultural Advisory Units. “Rational development and management of rural areas is possible only if it is based on scientific analyses,” says one civil servant. Policymakers believe that maximum utilization of knowledge guarantees adequate decisions and improvements for rural population. Scientific expertise and reports are considered by them as independent and free of political influence. Additionally, policymakers assume that scientists present their opinions according to gathered experience and observations. Therefore, scientific data and practice are reliable source of information, however, cannot be completely used by policymakers due to limitations mainly from European regulations, governance decisions and availability of funds.

Policymakers filter scientific information, taking only what is necessary for particular policy documents. Civil servants distinguished two groups of research. The first group characterizes research ordered by policymakers for specific need e.g., to find out what the stocks of cattle are in particular region or to propose solutions to existing problem. Such research might be of conceptual use because they provide response to specific research question. The second group is not ordered research, which was conducted by scientists in the scope of long-term programmes or other projects. They might accidentally fall into policymakers’ hands and be utilized when necessary anyhow.

Transferring knowledge by policymakers into text of policy document depends on the particular report. Data are converted according to officers’ needs, they are

⁶ ‘programming’: the process of organisation, decision taking and financing in several stages intended to implement, on a multi-annual basis, the joint action by the Community and the Member States to achieve the priority goals of the EAFRD; (Article 2(a) Council Regulation (EC) No 1668/2005)

simplified e.g., to elementary statistical information so as to draw conclusions and apply them directly while programming measure. Very often policymakers cooperate with author(s) of particular report in case of lack of clarity or in order to formulate measure and level of its support. Some reports can have multiple uses. In total, rural development policymakers utilize circa 30%-40% of scientific knowledge. Policymakers admitted to use around 30% of scientific information in policy whereas according to scientists, application of expert knowledge in policy documents amounts to circa 40% or even more.

According to the respondents, pre-accession programmes, like SPARAD and PHARE did not require comprehensive analysis, only informative support because of the scope of the programmes. PHARE programme aimed at technical assistance in terms of advice, training, transfer of agricultural know-how in the area of future RDP 2004-2006. Moreover, pilot programmes for two extreme regions in Poland were implemented (PHARE 9906.04), where packages concerning maintenance of extensive pastures and meadows were tested. Within PHARE, meetings with experts from France and Germany were conducted in order to benefit from experiences of other countries and do not repeat the same mistakes in terms of programming, implementing, monitoring and practicing rural development programmes. Within SAPARD programme, the level of knowledge utilization during establishment of pilot agri-environmental programme was low due to lack of data. Often, scientific units did not have analysis corresponding to the standards of European Commission or they have only outdated information.

The need for knowledge increased during preparation of the RDP 2004-2006 due to obligations that were imposed by Council Regulation (EC) No 1257/1999. Policymakers wished reports concerning current situation in rural areas showing disparities, gaps and potential for development. Elaborate scientific journals included recommendations and proposals of measures that could be placed in the RDP 2004-2006. Nevertheless, due to the negative attitude of farmers towards Poland's accession to the EU, policymakers have chosen measures that guaranteed relatively high efficiency of transferring money to rural areas and were related to Council Regulation (EC) No 1257/1999 but not necessarily consistent with scientific recommendations. Scientific expertise served a basis for diagnosis of present conditions and strategy for rural development, which was placed in the document. Moreover, scientific reports were of conceptual use while programming most of measures in sense that expertise presented ideas about the shape of measure, its level of financial support, type of farms and areas eligible for its support. The criteria for

semi-substance farm undergoing restructuring have been calculated by means of the indicator “Standard Gross Margin,” whose authors work for the Institute of Agriculture and Food Economics. In designation farms situated on Less – Favoured Areas, the “Land Quality Index” (LQI) was used together with population density factor and share of population engaged in agriculture to fulfil agricultural productivity criteria. The LQI has been applied to distinguish farms situated on the land with low productivity potential and facing difficulties in land management. The index reflects the environmental potential for agricultural production controlled by natural conditions. It is an aggregated indicator based on the assessment of factors like: soil quality, climate, land relief and soil moisture index. This database belongs to the Institute of Soil Science and Plant Cultivation in Puławy and was developed in the 1970s as a part of research on methodology assessing agricultural land quality in Poland. The principle of the research was to generate indicators for qualitative and spatial assessment of natural factors exercising potential crop productivity for planning purposes on the municipality level. This methodology was later performed and separate indicators were calculated for entire territory of Poland, thus the database was available in excel format and employed for delimitation of Less-favoured Areas in measure 3 of the RDP 2004-2006.

The measure 4 of the RDP 2004-2006 is a “Support for agri-environment and animal welfare” called the *National Agri-environmental Programme* (NAP). It refers to strengthening patterns of stable and sustainable farming system, especially to protection areas that are endangered with degradation. The NAP programme consists of seven agri-environmental undertakings, called “Agri-environmental packages,” which imply agricultural management focused on environmental protection, conservation of habitats with high natural value and maintenance of animal genetic resources. While working on each package, policymakers took advantage of reports such as inventory of rural areas, inventory of permanent grasslands, statistical reports concerning agricultural production and environment in rural areas. The packages were finalized by policymakers; however, that was a result of discussions and conclusions after meetings with scientists (Institute of Reclamation and Grassland farming, Institute of Soil Science and Cultivation), ornithologists (Polish Association of Birds Conservation) and sympathizers from NGOs (Naturalist Club). The cooperation and gathered knowledge by policymakers was essential e.g., in order to calculate the amount of payment for each package. Information concerning average economic outputs of agricultural holdings in 1999, 2000, 2001, constitutes a ground for a level of payment. Additionally, each package

covered a set of strict requirements going beyond Usual Good Farming Practice (UGFP). The UGFP has been prepared by officers from the MARD so that would be understood by farmers. The UGFP is a simplification of the Code of Good Agricultural Practice, whose authors represent the Institute of Soil Science and Plant Cultivation in Puławy. The UGFP fulfils a role of guidebook explaining: application of wastewater in farms, agricultural use of municipal sewage sludge, application of organic and mineral fertilisers, measures towards plant protection, farming on grassland, habitat protection and soil and water protection.

The choice of measure 5 “Afforestation of Agricultural Land” was dictated by the estimations of the National Woodland Extension Programme adopted by the Resolution of Council of Ministers in 1995 and amended in 2003. This programme, based on scientific reports, pointed out a high amount of low quality land used in agriculture that could be afforested in order to conserve and consolidate ecological stability of afforested areas through reduction of woods fragmentation and rise of ecological passages. The calculation of payment for each element of this measure was made by policymakers with the support of forester-economist.

In the measure 6 – “Support for meeting EU standards” specificity of aid through lump-sum amount required average amount of payments for various investments depending on agricultural production. The scientists from the Institute of Agriculture and Food Economics, Institute for Buildings, Mechanisation and Electrification of Agriculture participated in calculating average amounts for milk farms and egg-laying hen farms. Average costs of equipment were determined e.g., for: modern milking systems, milk coolers open and closed, wash-basin with water heater, farm water intake and modernization of the animal boxes with equipment.

The statistical data from the Polish Central Statistical Office, the Institute of Agriculture and Food Economics and the Institute of Agriculture and Rural Development have been applied in the NSP necessary to submit to the European Commission before RDP 2007-2013 according to the Council regulation (EC) No 1698/2005. The information dealt with natural and demographical conditions, Polish economy and productivity in agriculture, tendencies in national consumption, social and economic aspects of rural areas, employment in agricultural sector, incomes, infrastructure, non-agricultural activities, services and environmental aspects of rural areas such as, biodiversity, natural soil and water conditions. All information was utilized to prepare a simplified description of present conditions in rural areas in Poland for the NPS and RDP 2007-2013.

The process of preparation the RDP 2007-2013 in comparison to the RDP 2004-2006 has changed significantly. Policymakers profited from experience gathered while programming the RDP 2004-2006 and contacted only with the well – known scientists. Moreover, there were “working groups” responsible for particular measures. The panel of each group depended on characteristic of measure. For instance, the panel of working forestry-environmental group consisted of representatives from: General Directory of National Woodlands, Forest Research Institute, Agency for Restructuring and Modernisation of Agriculture, and officer from the MARD. The group of agri-environmental measure was formed by represents of institutions engaged in preparing packages in the previous RDP 2004-2006.

Usually policymakers used finished reports, however, in case of forestry measures of the RDP 2007-2013 data were taken from not published report. Information concerning fire hazard was needed, thus policymakers used comprehensive expertise of Forest Research Institute. The research was conducted on samples in the whole Poland and the results presented the level of fire hazard in the country.

Policymakers admitted that using scientists’ experience is beneficial while working on monitoring system in order to evaluate results of the RDP 2007-2013. Therefore, the monitoring group has been established with tasks to discuss advanced indicators from Common Monitoring and Evaluation Framework and evaluate the target value of indicators. The proposals and prognosis of indicators application will be applied in current monitoring of rural areas. The organizations directly involved to work in the monitoring group are: Institute of Reclamation and Grassland Farming, Institute of Soil Science and Cultivation, Institute of Agriculture and Food Economics, Polish Association of Birds Conservation and Warsaw Agricultural University.

In relation to the above description, policymakers in Poland mainly utilize two types of research use: conceptual – when applying indicators, instrumental when utilization of statistical data, while preparing policy documents. They also claimed to use this knowledge for other reasons. Some distinguished informative function of knowledge in order to explain farmers and foresters issues concerning seeding, cultivation, and protection of the environment. Others, due to their responsibilities, pass on the gathered knowledge by giving presentations on seminars and conferences or organizing workshops for representatives of: Agency of Restructuring and Modernization of Agriculture, Local Governments, Marshal Office, Agricultural Chambers, Agricultural Advisors, farmers, foresters, students, other Member States and European authorities.

Knowledge has been recognized by policymakers as the perfect tool to extend education in the scope of environmental protection in rural areas.

Policymakers believe that scientific information broaden horizons and allow being fully conscious while making decisions, even if they are political. They use scientific knowledge as a support for their arguments during discussions with farmers, students, local governments, beneficiaries, representatives from DG AGRI⁷. Some policymakers declared that scientific information sometimes provide a new light or different perspective to a specific problem.

The knowledge they received is also applied according to personal interests. Some employ it when writing scientific articles or PhD theses.

3.3.1 Environmental Knowledge

Special attention should be devoted to environmental knowledge. Five of nine measures under the RDP 2004-2006 are related to environment in rural areas or protection of this environment by investing in better farm equipment, appropriate usage of fertilizers etc. The focus on environmental issues comes from concern of Western European countries as well as from reform of the CAP in 1992, which together with the Treaty of Union ('Maastricht Treaty'), approved that the development of rural areas was to be included as part of the Community Policies for economic and social cohesion (Article 130a) and that the EU "shall aim at reducing the disparities between the levels of development of the various regions and the backwardness of the less - favoured regions." The focus placed upon the environment and the protection of natural habitats was an essential element of the new policy approach. The measures accompanying the reform of 1992 (in particular Council regulations(EC) No 2078/1992 on agri-environment and (EC) No 2080/1992 on afforestation of arable land) built up market policy redefinition. In particular, they replied to concerns on the relationship between the environment and the multi-purpose nature of agriculture.

That obligation of incorporating environmental measures to the RDP 2004-2006 have had an impact on rise of environmental awareness among policymakers, scientists and other actors like farmers, foresters, advisors. At the beginning of preparation of the document, it was difficult to receive information concerning inventory of permanent grasslands, value of rural environment, ecological production because such studies have been never conducted before. However,

⁷ DG AGRI - Directorate-General for Agriculture and Rural Development

scientists quickly followed new trends and needs of policymakers. Almost every scientific report includes now environmental assessment.

At the moment Polish scientists, as well as many others in Europe, reflect on sense of protection habitats against climate changes and the influence of these to agricultural production. Therefore, environmental knowledge became extremely 'popular' and the first among other types of knowledge utilization in the context of rural development.

3.4 Quality of scientific reports

Scientists publicise their products in various forms such as articles, brochures, books and reports. These reports are designed for policymakers so they are written in the language understandable for them. Books and brochures are composed for larger amount of recipients, so have even more simple language. Although scientists take into consideration future potential readers they use scientific terminology as much as possible sometimes forgetting about recipients. According to policymakers, data in scientific reports is always valid⁸ and problems are deeply analysed, but it also depends on author. Research methodology is important for the officers in order to check the representatives of samples in the research as well as internal and external validity. If the external validity is low then the results of such research cannot be applied in policy document. If methods are not clear for policymakers, they immediately contact the author(s) of the report and ask for an explanation.

Policymakers wish to have standardized format of reports. In terms of specific requirements for European Commission, guidelines could be provided for scientists.

3.5 Official relation between the Ministry and scientific institutes

In Poland, scientific research for agriculture and agricultural markets are exercised by a number of organizations such as: research and experimental units that are supervised by the MARD, units of Polish Academy of Science, universities and NGOs. A wide variety of institutions, which have fulfilled a role of knowledge producers, were involved in the process of preparing the RDP 2004-2006 and RDP 2007-2013 are listed in appendix 2. The institutions that were mentioned by policymakers as the main source of scientific information occupy first places in the ranking and are briefly described (appendix 2). These principal 'knowledge producer' institutions are supervised by the MARD. Once the Ministry oversees the activities of research and experimental units, it assigns a task, which is to guarantee scientific assistance ad hoc. Superintendence over institutes also means that the

⁸ Not outdated

Ministry gets long-term programmes of research to examine, eventually inserts small changes and gives approval. However, the coordination inside the Ministry is deficient, whereas department A approves institutes programmes, department B uses them. If the officer from department B does not introduce any adjustments at the right time, she/he will not be able to fully take advantage of these programmes. Moreover, it is impossible to foresee and include all needs for reports in long-term programmes if rural development policy, especially at European level, evolves so dynamically. Thus, long-term programmes of institutes focus more on theoretical basis rather than specialized research.

Policymakers stood out at two institutes, in which cooperation is the most fruitful and has existed “forever” that means since beginnings of preparing rural areas and agriculture to European standards via PHARE and SAPARD programmes. These distinguished units are Institute of Reclamation and Grassland Farming and Institute of Soil Science and Plant Cultivation; both supervised by the MARD. Within these organizations, the cooperation is more personal rather than institutional and sets up on individual affair between particular rural development policymaker and scientist. Although this personal communication results in a quick and efficient exchange of information thanks to avoiding official channels, the service of institute as scientific providers and advisors becomes more individual rather than institutional, hence, the institute does not fully take part in the process of consulting and delivering information. In case of extra paid reports, thanks to personal cooperation the Ministry saves money because it does not have to pay the margin on account of service to the institute, moreover, it is probably profitable for the scientist as she/he does not have to pay this margin to the institute as well. As a whole, the institute loses doubly, finance and role of scientific provider. Some institutes supervised by the MARD e.g., Institute for Reclamation and Grassland Farming, have serious financial problems and although there is this personal cooperation, the Ministry does not often propose extra paid reports but demands from institutes to conduct all research under long-term programmes. In case of lack of funds, the quality of research might suffer and be less useful for policymakers. It is worth to mention that if institute will not produce valuable information the Minister of Agriculture and Rural Development has a power to put such institute into liquidation. In that way interests of both policymakers and scientists are posed, thus perhaps, policymakers could look for additional funds for institutes, in return for that, scientists would continuously inform policymakers about running research and projects that are finances from other sources. As it turned out, institutes work for different projects to

gather some extra funds. Policymakers admitted that experts often study very interesting issues (like in case of the Institute of Soil Science and Plant Cultivation), however the information about these projects never gets to the civil servants. Such situations are generally reluctant to further cooperation, particularly if policymakers have searched before for this kind of data and did not find any. Hopefully, all misunderstandings are quickly revised and generally not influential on cooperation between the Ministry and these two institutes. At the moment, scientists from the Institute of Soil Science and Plant Cultivation cooperate with officers from the Ministry in the project: “Environmental Impact Assessment of Rural Development Plan for Poland 2004-2006.”

Policymakers ranked Institute of Agriculture and Food Economics as the third important source of information, in which cooperation is more formal. To order reports and information, the Ministry sends official letters to the Institute, but “not always precisely formulate questions and themes for a research,” said one of the working scientists. If the question is too broad and if there is no information about a civil servant to consult, the scientist decides by her/himself the scope of the answer, which does not necessarily have fit policymakers’ expectations. In case of data concerning contact person on such a letter, broad questions can be easily confronted and right information can be provided. Additionally, scientists from this institute complained: 1) for short time of generating answer for which sometimes they search in other scientific units and 2) for being only advisory organ with completely no influence on any decisions.

Policymakers distinguished Institute of Agriculture and Rural Development of Polish Academy of Science as relevant source of information and admitted that working there scientists willingly collaborate with civil servants. Again, the cooperation is rather personal and without financial agreements.

3.6. Cooperation between users and producers

Beginnings

Scientists have appreciated the communicativeness of rural development policymakers as well as their openness and willingness to cooperate with the representatives of science. They admitted that there were broad scientific consultancies while programming the Rural Development Plan and Programme, in comparison to other documents they worked on. This tradition began while preparation of the RDP 2004-2006. This kind of document was a novelty in Poland

and the first draft of the Plan was difficult to formulate, therefore, broad consultations were needed. The group of professionalists who were involved in working on this document stay close to policymakers through today. It is worth to mention, that this tradition has been started by the chief of Department of Pre-accession Programmes in the MARD, who came from scientific environment to the public policy and brought the practice of consulting and benefiting from scientific evidences.

Interactions

Interactions between policymakers and scientists are both formal and informal. The interactions with scientist from Institute of Agriculture and Food Economics are mostly formal and aim at exchanging information, whereas the relations between policymakers and scientists from Institute of Reclamation and Grassland Farming, Institute of Soil Science and Plant Cultivation, Naturalistic Club and Polish Association for Birds Conservation translate from occupational into quasi friendly terms. For that reason, exchange of information takes place also in informal way, during private meetings. Informal meetings result from sharing the same interests and believe. Both groups meet on actions organized by NGOs e.g., for counting storks, observing birds, walking in the forest.

The interactions with scientists from the Institute of Agriculture and Food Economics are formal due to either lack of friendly relations between policymakers and scientists, different beliefs or just lack of acquaintance.

Intense interactions were held during preparatory works of the RDP 2004-2006 and RDP 2007-2013. Civil servants were arranging appointments with scientists and also contacting them by phone and mail. For instance, while working on agri-environmental measures, the meetings were held a couple of times per week.

Moreover, scientists often play a role of scientific advisors while keeping company on international conferences and official meetings in Brussels.

Scientists often invite rural development policymakers for conferences and seminars of their organizations. They stressed that at least one representative from the Ministry almost always participate in such events.

Difficulties

There is a cultural gap between policymakers and researchers, as mentioned in the concept of “two communities,” which sometimes can lead to a lack of understanding. Polish rural development policymakers and scientists pointed out the

problem of communication in terms of subject and the scope of the ordered research.

Although it seems that the role of policymakers is to demand, it sometimes happens that scientists offer topics for research even inside long-term programmes in order to fit policymakers' specific needs and combine it with policymakers' database.

Furthermore, policymakers demonstrate lack of planning the research needs. They always would like to have an answer immediately; however some information is spread throughout various institutions and generated in different formats than European requirements, thus preparation of such reports take time. This time constrain impedes policymakers in submitting documents on time. Civil servants accuse scientists of not being aware of policy framework, thus it is often a source of misunderstandings as some decisions, resulted from Council regulations, are difficult to be accepted by scientist. In addition, lack of time and regular cooperation negatively influence on the process of exchanging information. At the final point, the administrative disorder inside the Ministry should not have been spreading outside to the world of science.

What kind of relation?

In Poland, rural development policymakers and scientists are pushed to interact through the framework of the official cooperation between the Ministry and some scientific units. Additionally, preparations of rural development documents required scientific basis and consultancy with experts. Taking into consideration the fact that rural development policymakers have been working with representatives from various organizations at least since preparation the RDP 2004-2006, I conclude that this is an example of 'epistemic community' presented by Haas (1992). For the last three-four years, a personal network of academics and policy participationers arose who work on the first texts of rural development documents with a particular degree of independence from political bosses. They are trying to get a round the complicated institutional dependency between the MARD and scientific units. Scientists, who are members of this network, represent mostly: the Institute of Reclamation and Grassland Farming, the Institute of Soil Science and Plant Cultivation, the Naturalistic Club and the Polish Association for Birds Conservation. These scientists expressed understanding of the framework in which policymakers work. In spite of the fact that civil servants are not always clear about their needs, scientists are used to suggesting the scope of research questions. The cooperation is

based on transdisciplinarity, heterogeneity and scientists who do not yet participate in the 'epistemic community' can easily access.

Both policymakers and experts work on research products for the final shape of measures for Rural Development Plan and Programme.

Unfortunately, politicians can always make amendments against policymakers' products and recommendations. This was the case of measure when guaranteeing support for semi-subsistence farms undergoing restructuring. As it turned out, this measure was not very popular and according to experts, uneconomical. Thus, the RDP 2007-2013 did not include this measure at first. Only when politicians were deciding about the final shape of the programme did they just order the measure for semi-substance farms undergoing restructuring back. Consequently, the financial means for this measure had to be reserved, instead of allocation money for efficient support for farmers.

The relation between rural development policymakers and scientists fluctuates around the co-production model, however only during preparations of rural development documents. Although both policymakers and scientists exactly know about deficiencies of their relation, the question is what are their ideas to improve or change some set of patterns?

How to improve cooperation between users and producers?

Based on own experience, the goal of policymakers is to focus on a small group of experts, which are the most essential for policymakers in delivering scientific data where it is easy to interact. Officers induce tight personal cooperation rather than institutional because it is easier to reach scientists who work in 'working groups' on certain problems. Supposedly, this small group of experts already exists and these are scientists who cooperated with civil servants within the RDP 2004-2006 and RDP 2007-2013. However, it could be extended to representatives from the Institute of Agriculture and Food Economics, the Institute of Agriculture and Rural Development, the Institute of Geography and Spatial Organization, the Institute of Environmental Protection and possibly other organizations.

Furthermore, policymakers declare to try to inform timely experts about the need for research, required format and discuss with them the scope of research questions. Civil servants would prefer regular collaboration with scientists rather than based only on working on special themes. They could also present modifications to research so that would fit more specific needs if they are allowed to participate

during the time of conducting research by scientists. In addition, both policymakers and scientists should look for more topics and events they could cooperate with.

To make cooperation more efficient, policymakers claimed that they must follow research developments and achievements by participating more actively in scientific seminars and conferences. They believe that frequent informative meetings improve keeping up with scientific news and help to select the best experts to cooperate with. It seems that scientists sufficiently promote their research on conferences, seminars, workshop for farmers and advisors, brochures, books available at libraries, radio and TV programmes. Many publications are spread to particular organizations as normal practice. Moreover, internet sites of each institute provide exact information about running projects and allow downloading of the publications.

Scientists suggested a new way of presenting information could improve utilization when the scientific publications would have more attractive formats by presenting results in more graphical way.

Proposals from both sides exist, yet how to enlarge knowledge utilization by policymakers and improve relation, are not translated from talking into practice. Fortunately there are some optimistic scientists who are saying “even ineffectual cooperation is worthwhile, it is broaden horizons and develop some set of pattern that can make a profit in relation for future.”

3.7 Cooperation between scientists

In 2002, the scientific European Rural Development Network (ERDN)⁹ was established to integrate efforts and competencies of different Polish and European research units. ERDN is an idea of research conducted by International Institute for Applied Systems Analysis (IIASA) in Austria, commenced by Dr. Gerhard Heilig. The network gathers leading research centres carrying out research concerning rural development in Poland and in Central and Eastern Europe. The responsibility for coordination of the Network belongs to Institute of Agriculture and Food Economics in Poland. The ERDN received financial support from the Polish Committee of the Scientific Research in the framework of the research task: 404 “International cooperation in the form of the scientific network rural development in the Central-Eastern Europe.”

The goals of the network are: 1) developing basis for cooperation of scientific units inside Europe, 2) exchange and promotion of scientific experiences and achievements of the participants of the Network in the area of the issue analysed

⁹ All descriptive information about the ERDN has been taken from Homepage of ERDN, access at: 18.04.2007.
<http://erdn.waw.pl>

and 3) international scientific cooperation in the area of rural development and farming and preparations of the applications for co-financing of the scientific research within the 6th Framework Programme of the EU.

Within the network, some ideas for research projects have been worked out and submitted to the EU Programmes. Moreover, the international working meetings took place and magazines have been published, bringing results of research works of scientific institutions inside network.

It is doubtful that rural development policymakers have ever read these magazines. Only information about the ERDN has been passed to them during the meeting concerning EUruralis, at the end of July 2006. Nevertheless, policymakers could be interested in the results of this international research concerning rural policy. Lack of communication outside rural development documents framework was due to lack of information. Perhaps scientists assume that civil servants would not be interested in such information. It is possible that policymakers did not make any effort to find out how scientists cooperate. Perhaps, the ERDN generates new ideas for research projects, in which scientists and policymakers could cooperate together?

It seems that the ERDN is an initiative of communication between knowledge producers in Poland and international actors. Exchange of information between experts from different disciplines and from different countries make available many comprehensive analyses and research. It may widen the spectrum of seeing rural development in Poland in the context of neighbour countries. The experts are getting the internationally oriented intuition and this experience definitely could contribute to rural development.

An interesting phenomenon is the fact that the scientists from the Institute of Agriculture and Food Economics, who complained about being only advisory organ for policymakers, also coordinate the ERDN. If they would like to influence policymakers' decisions more, why they do not share the results of research with the policymakers in order to instil in them more international glance? It puzzles me, whether the interactions between civil servants and scientists really exists only in the storyline of Rural Development Plan and Programme¹⁰?

¹⁰ By storyline of Rural Development Plan 2004-2006 and Rural Development Programme 2007-2013 I understand all activities directly connected with preparations of these documents and needs of consulting with scientists to design measures and implement monitoring systems.

3.8 Policy – science interface in rural development in Poland

What is happening now in Poland within the rural development practice?

It can be recognized that rural development practice world of policy is separated from the world of politics. Policy constitutes a kind of stream, as called by Kingdon's Multiple Streams Perspective (Zahariadis, 1999). Ideas and knowledge in the policy stream are co-produced by academia and research, NGOs' workers and bureaucrats from the MARD. They all share the common concerns in rural development areas. The knowledge is presented in various ways by publications, hearings, conversations and interactions. There are many ideas floating around that broaden horizons, however, special considerations only receive proposals that are consistent with regulations imposed by the European Commission. Policymakers while preparing policy documents in majority utilize two types of research: conceptual – when applying indicators and instrumental - when utilization of statistical data. They use knowledge to inform and educate other stakeholders and themselves.

Politics constitute a different stream. Kingdon suggests three characteristics: national mood, pressure group campaigns and administrative or legislative turnover. National moods “refer to the notion that a fairly large number of individuals in a given country tend to think along common lines and that the mood swings from time to time” (Zahariadis 1999). Pressure groups may tend to influence politics mood. By supporting certain political programme, in exchange they might demand to put items on agenda. Turnover of key personnel in the administration can have impact on what is happening inside the stream. Certain issues and rules of a new Minister may receive more attention than before. The most powerful effect on agenda has national mood together with turnover of high administration.

Assuming that policy stream will be considered as a pressure group, co-producers (i.e., civil servants, scientists, NGOs workers and other stakeholders) might try to influence political agenda. They may utilize scientific evidence in political or symbolic way.

The problem with the Polish way of co-producing in rural development practice is that some scientists do not recognize the differences between policy and politics stream. Politicians concentrate more on power-struggle and on maintaining positions in the government, at all costs. Thus, they sometimes make amendments of policymakers' texts against existing recommendations. This characteristic is sometimes attributed by researchers to civil servants, especially these positioned on

a high level. It is believed that high civil servants care more about an appreciation of the Minister rather than making policy. Thus, scientists lose willingness to cooperate and co-produce with such civil servants as they might remain with the belief that their publications are underused when policymakers make decisions according to the Minister expectations.

Clear boundary between policy and politics stream should be specified for Polish scientists in order to understand the framework in which civil servants operate. Perhaps, in rural development in Poland the boundary is formed by the rules imposed by the European Commission. Rural development programmes must seriously take into account and include instruments proposed by the European Commission in order to ensure financial support from the EU. Polish politicians cannot much influence on changing these rules. That is why, rural development documents are sort of a storyline around which scientists can cooperate with civil servants with a particular degree of independence from politicians. The fact that the interactions and co-production take place only in the area of rural development documents is not a negative characteristic of rural development practice in Poland. Model of co-production is developing and rural development programmes form first ground for co-production.

How policymakers perceive science and scientists?

Policymakers see science as independent source of information. However, they feel that they utilize it insufficiently. Perhaps, the reason is that they make science utilization more contingent upon author of scientific expertise rather than scientific results inside such a report. Policymakers distinguish two types of scientists. The first types are scientists who present very creative and innovative approach to research and are passionate of their work through whole life. The second group represents scientists who are just officers of science and whose creativity stops at PhD level, after which they are performers and good managers of projects in terms of working out plans and integrating results of fieldworks. Being aware of such division, policymakers utilize more willingly reports of passionate and creative experts who they know and trust. Then they refer to their works in policy documents.

How scientists see science in policymaking and policymakers?

According to experts, science should constitute: 1) a background of decision making process, 2) auxiliary instrument and 3) support for strategic thinking not tactical moves. One scientist said that fortunately, “science is a good diagnosis of politics and policy,” it gives proposals and solutions how to deal with certain problems, which are later adjusted by policymakers.” However, experts did not suggest how scientific information should be used and transferred by policymakers into policy.

Scientists divide policymakers in four groups:

1. policymakers who do realize the importance of document and its substantive value, but do not use it directly due to tactical or political moves
2. policymakers who do not realize the importance of documents and its substantive value due to not recognizing the problem or do not have information about that problem
3. policymakers who do not want to utilize scientific information because it is inconvenient for them
4. policymakers who utilize science in different ways as generation of new ideas, an enlightenment and a new thinking

Scientists expressed positive attitude towards cooperation with rural development civil servants from the MARD. They recognized them as policymakers representing the first and the fourth group.

Nevertheless, they criticize administration, in general, for weak cooperation inside.

Co-production – summary

There is some kind of co-production in rural development practice in Poland. Co-producers represent in majority scientific units supervised by the MARD, NGOs' workers and the MARD itself. Civil servants who participate in the process of co-producing are open-minded and do not occupy important positions in the Ministry. Hence, a personal network of academia and policy participationers arose who work on the first texts of rural development documents with a particular degree of independence from political bosses. The co-production concerns programming measures in the rural development Plan and Programme. Civil servants have ordered reports e.g., concerning agricultural production and agricultural markets, statistical data of rural areas and rural population and inventory of flora and fauna in some rural regions. They referred to scientific analysis in policy documents if they fit their needs. Mostly, they used information in instrumental and conceptual ways.

They also benefited from experience and skills of scientists during discussions about the final shape of measure. It happens that scientists keep company civil servants while participation in e.g., officials meetings in Brussels, where they play a role of advisors.

Policymakers hardly ever discuss the scope of the research and possible application of the results with scientists before conducting research. Civil servants play first fiddle and decide what knowledge they utilize while taking into consideration rules and limitation from the European Commission and sometimes from the Minister. In addition, they sometimes demand answers from experts immediately and associate lack of timely respond with unconscientiousness and laziness of expert, which is not often the case.

The justification of their unthoughtout moves can be cause by the fact that civil servants are trying to find their role as co-producers. Obviously, it is a new situation and a new form of communication for scientists as well, who also need to learn how to work and discuss their research with policymakers.

In the last couple of years, administration has undergone structural changes and at the moment there is large number of young and motivated civil servants who show interest in science. Additionally, scientists finally understand and see that their publications such as articles, books, reports and brochures have a wide variety of audience. Not only there is a necessity for information concerning present mechanisms regulating agricultural markets and rural development but also scientists desire to influence rural development policy. Thus, it works like self-winding up spiral of need, which will drive co-production and increase utilization. Perhaps policymakers will embed other forms of knowledge usage such as enlightenment and political.

Hence, Polish policymakers and scientists should work on co-production improvement and development. Why?

The answer might be: 1) to avoid unnecessary research, imprecise research questions, struggle about prioritizing issues, uncertainty of future rural development in Poland; 2) to overview what is scientific view about certain problem; 3) to know and interpret what is happening on international rural arena; 4) to broaden horizons and have multiple perspective; 5) to define goals for future rural development and then look for support, not like it was with previous programmes, that the European Commission admitted money for rural development programmes and then the choice of instruments have been made by Polish policymakers; 6) to increase utilization and embed new forms of knowledge usage.

Chapter 4 The EUruralis story

4.1 Introduction of the EUruralis project

4.1.1 Prelude

The EUruralis project is a scenario study on Europe's Rural Area, which has been established in 2004. The project was initiated by the Working Group of Sustainable Development and System Innovation and commissioned by the Dutch Ministry of Agriculture, Nature and Food Quality (LNV). The working group of Sustainable Development and Systems Innovation has been established at Wageningen University and Research. Professor Rabbinge and Professor Bouma paved the way to the Ministry of Agriculture, Nature and Food Security to make funds available. Their interest resulted from the fact that The Netherlands was chairing the EU in the second half of the year 2004 (Klijn & Vullings (EDS.), 2005). The year 2004 became epoch-making for the shape of the EU and the Dutch Ministry played the role of pioneer by introducing a deep concern regarding future of rural development in Europe.

The first version - EUruralis 1.0 aimed at having a ground for discussion with the Agricultural Council during Dutch presidency. The content of the project was an idea of open-minded policymaker, who went to scientists and asked directly about the possibility of establishing project that would present a prognosis for rural development in Europe. After that, Dutch policymakers formulated research questions to scientists based on literature study of Professor Rudy Rabbinge, in order to discuss what could be done and what could be the scope of the project.

The main concept of the project is to present a prognosis on what could happen with rural areas in Europe while considering the current reforms of the CAP such as recent enlargements of the EU, ongoing world trade liberalization that influence on all economic sectors, present demographic changes and global changes (Klijn & Vullings (EDS.), 2005). What causes the project to stand out from others is the simple way of data performing. The potential changes that could affect European rural areas are illustrated thanks to different scenarios, which took four extremes. Other projects provide results in one scenario, which cannot foresee all uncertainties. The time setting of the project is quite far from present and looks ahead thirty years; however, it tries to include shorter steps, every ten years. The content is based on the current major issues in rural policy and seen from the perspective of sustainable development. The sustainable development approach is summarized under indicators categorized in three groups: People, Planet, and Profit.

The main goal of the EUruralis assumes that: “EUruralis provides a tool for a structured strategic discussion on the European scale between policymakers and scientists from different fields and countries. It also gives an opportunity to develop an integrated tool for assessment of the European level on different scales (from global to local)” (Rienks, 2006).

4.1.2 The EUruralis models

The EUruralis is built on three models, which are described below¹¹.

I. LEITAP – adapted version of the Global Trade Analysis Project (GTAP). The main aim of the GTAP was to support quantitative analysis of international trade, resource and environmental concerns in economic framework. The project is upheld by international organizations, for instance WTO¹², World Bank, OECD¹³, and UNCTAD¹⁴ as well as by national agencies with active research programmes. The GTAP projects generates database, static multi-regional general equilibrium model (Klijn & Vullings (EDS.), 2005).

II. IMAGE – the Integrated Model to Asses the Global Environment. It evaluates effects of global changes in population, agricultural production and climate on the environment. The main goal of this model is to “support decision-making by quantifying the relative importance of major processes and interactions in the society-biosphere-climate system” (Klijn & Vullings (EDS.), 2005). In the IMAGE model, information about economic and demographic developments for 17 world regions are translated into subsystems, thanks to general equilibrium economy model (WorldScan) and population model (PHOENIX). The subsystems are 1) Energy-Industry System, 2) Terrestrial Environment System and 3) Atmospheric Ocean System.

1) Energy-Industry System estimates regional energy consumption, energy efficiency improvements, fuel substitution, supply and trade of fossil fuels and renewable energy technologies. On the foundation of energy use and industrial production, emissions of greenhouse gases, ozone precursors and acidifying compounds are calculated (Klijn & Vullings (EDS.), 2005).

2) Terrestrial Environmental System compute land-use changes on basis of regional consumption, production and trading of food, animal feed, fodder, grass and timber with consideration of local climatic and terrain properties. This system calculates

¹¹ Based on (Klijn & Vullings (EDS.), 2005)

¹² WTO – World Trade Organization

¹³ OECD – Organization for Economic Cooperation and Development

¹⁴ UNCTAD – United Nation Conference on Trade and Development

emissions from land-use changes, natural ecosystems and agricultural productions systems as well as exchange of CO₂ between terrestrial ecosystems and atmosphere.

3) Atmospheric Ocean System adjusts changes in atmospheric composition using the emissions of other factors in 2 previous systems by taking into account CO₂ uptake and atmospheric chemistry. This system computes changes in climatic properties by resolving changes in radiative forcing caused by greenhouse gases, aerosols and oceanic heat transport (Klijn & Vullings (EDS.), 2005).

III. CLUE – the Conversion of Land Use and its Effects. It is used to allocate changes in land use. Model was developed for spatially explicit simulation of land use change using empirical analysis of location suitability in combination with dynamic simulation of competition and interactions between spatial and temporal dynamics of land use systems (Klijn & Vullings (EDS.), 2005).

4.1.3 The EUruralis concepts

The EUruralis is based on some central concepts and these are presented and described below.

DPSIR

The EUruralis takes the DPSIR approach (distinction of Driving Forces, Pressures, States, Impact and Responses). It says that direct, indirect or distance driving forces (D) might affect a defined system such as ecosystem or agro system by so called pressures (P) influencing its state (S). This can be recognized as an impact (I), which should be evaluated by society's positive acceptable or negative interests. Such evaluation may lead to policy response aiming either at mitigation or compensation or direct drivers. In the EUruralis the importance of land use is emphasised. Land use is considered to express societal needs, interests and economical laws, additionally, it influences the biophysical and partly on socio-cultural values.

Drivers

DPSIR approach was applied to distinguish major driving forces operating both in past and future of rural areas. The EUruralis assumes that in general, future of Europe depends on some extend driven global developments. Examples of issues, which happened outside Europe and influenced daily life and future, are growing populations and income in countries such as China, India, and Brazil; the international trade barriers and opportunities; oil production and global change processes. Although the impact of certain drivers vary in time and place, their role is

often difficult to predict and access. Hence, the programme is trying to take into account some of the drivers to keep the EUruralis data relevant to the current situation. The following drivers are distinguished in the EUruralis.

- Natural forces - natural or man-induced climate changes or changes in sea level, which affect significantly natural ecology
- Geopolitical change and international trade – here the EU enlargement is taken into consideration as well as international agreement
- Demography – the growth or decline of populations and migration of populations has an impact on food demand
- Income – world economy determine changes in agriculture and other sectors
- Technology – fast shifts in agriculture so as to achieve efficiency in production are possible thanks to new technologies. Technology development will continue and influence European sectors.
- Consumer behaviour - preferences and behaviour of the consumers have a slow influence and will result in, for instance, animal welfare policy or nature conservation aspects.
- Policy - governments and international organizations steer future world development and the policy rules depend on them.

Scenario-model

There are four contrasting scenarios in the project. They are characterized as an explorative scenario-method focusing on credible futures. The set of scenarios is designed in order to enhance discussions linked with today's concerns regarding enlargements of the European Union, cohesion policy and the implementation of the environmental directives. This creates the attitude of the societies towards broad issues of globalization, cultural identity and environmental awareness and international solidarity, which are the roots of long term scenario studies (Klijn & Vullings (EDS.), 2005).

The four scenarios are: A1, A2, B1, and B2. A - scenarios focus on international cooperation – regional vs. global. The B - scenarios focus on government intervention – extensive vs. limited. Scenario A1 assumes that market-based solutions are most efficient to achieve strong economic growth and optimise demand and supply of goods, services and environmental quality. Scenario A2 assumes existence of market-based solutions among like minded countries, but shielded from countries with different values and standards, cultural identity strongly anchored in the countryside must be preserved. Scenario B1 assumes that market-based solutions

are necessary to exploit comparative advantages, but strong internationally coordinated efforts are needed to address wealth distribution, social justice and the environment. Scenario B2 assumes that self-reliance, environmental stewardship and equity are the keys to sustainable development (Klijn & Vullings (EDS.), 2005). Perhaps, scenarios are overlapping, but if things are happening in all four scenarios than there is high possibility of a true prognosis. If things are happening only in one scenario, it is probably some kind of extreme. Usage of four scenarios gives possibility of comparing them and this maintains the high value of the results.

Concept of sustainability

The EUruralis takes sustainable development as a basic and leading principle. The balanced development of different value domains for coming generations is emphasized. The idea of 3P, that is planet, people, profit, differentiates ecological properties and aspects (planet), socio-cultural values (people) and values belonging to the economical domain (profit).

The choice of indicators to perform the sustainability

The indicators have been chosen according to the 3P approach. Below there is a table with indicators used in the project.

Table 4. The EUruralis indicators.

People	Planet	Profit
Employment in agricultural sector	Biodiversity in natural areas	Change in yield
Self sufficiency	Biodiversity in semi-natural areas	Yields, related to assumed climate change
Animal diseases	Pollution	Income
-	Soil erosion risk	Expenses
-	Salinization	-
-	CO ₂ storage	-

In the project also integrative indicators can be recognized. They are called meta-indicators.

Table 5. The EUruralis meta-indicators.

Meta-indicator	Description
Overall 3P sources	Tables for the scores for People, Planet, Profit domains categorized for EU 15 and EU 12 countries showing scores in 4 scenarios
East-West	Specified for EU 15 and EU 12 showing whether or not cohesion is furthered by closing the gap in e.g., income or employment
North-South	An judgement expert on various pros and cons for scenarios in developing countries
Hot-spot-areas	An indication of those areas where at least one land use change is expected
Should be vs. will be differences	Confrontation of how the various world visions or expectations in four scenarios are confirmed or not by the EUruralis outcome.

A certain way of presenting core models

The EUruralis is designed as a computer game (the authors of the EUruralis compare the programme to the commercial games like the SimCity and SimRural PC games). It is a challenge for a user to find new reasons and manners for land use changes on the territory of the EU 27. The EUruralis presents historic and temporary facts, figures and pictures of the EU 27 so as the receivers could be informed. The EUruralis users have to explore the data by themselves. The programme thus offers interactions to create relations between different domains and levels of information.

4.1.4 The EUruralis versions

The first version of the project - EUruralis 1.0 was released in October 2004. The EUruralis 1.0 had limited use. It was presented couple of times for the European Commission, Directors of Rural Affairs and meetings of WWF. The data in the EUruralis 1.0 are quite general, at the level of the country and that is why the further version has been established. The aim of the EUruralis 2.0 is further development of the EUruralis 1.0. It is improved by showing the data at the level of the regions. The core concepts and methods are maintained. The advanced version is improved in order to:

- broaden the subjects (e.g., other land demanding commodities like bio fuels)
- deepen the subjects (present data at the regional level)

- explicitly present the policy options
- broaden the basis (international co-operation)

The advantage of the second version is a presentation of policy options that are now hot issues on the international rural arena. Four policy options are visualized in the programme: CAP market support policy, CAP income support policy, Bio-energy policy, Less Favoured Policy. For each policy alternative distinguishable policy measures are presented in the project. The EUruralis 2.0 is much more policy relevant, thus it is addressed mainly to civil servants, NGO's, farmers associations, environmental groups, nature groups, colleagues in research and for purpose of educational workshops.

Very often, scientific projects regarding rural areas are presented to the European Commission, who is a very limited group of people in Brussels, but the EUruralis is bringing more research to the policy people in different Member States. Taking into account that the directors of rural affairs might not have time to play with the EUruralis, the tool is addressed to the assistants of directors and senior officers who have more time and do preparations of new policy pieces.

4.2 Scientists –policymakers cooperation within the EUruralis

The model of relation between scientists and policymakers inside the EUruralis is an example of knowledge co-production. The EUruralis is a product of policy-science interconnections. Two Professors from Wageningen University and Alterra Research first expressed their concern about the future of rural development in Europe to Dutch policymakers. Once the LNV made funds available for the project on behalf of the Ministry, the Policy Advisory Group was installed to give advice on the policy relevance and presentation mode of the EUruralis (Klijn & Vullings (EDS.), 2005). The Policy Advisory Group consists of few civil servants working in different departments in the LNV and their responsibility is to cooperate with scientists.

Next to name is the Scientific Advisory Group, who was giving contribution in designing the project at the very beginning. This scientific group consists of: the Director of Environmental Assessment Agency (RIVM), the Deputy Director of Agricultural Economics Institute (LEI), the two mentioned above professors from Wageningen University, the Director of UNEP-GRID in Poland and the professor from INRA-CIRAD in France. The foreign contributors were participating in the EUruralis meetings and helping to broaden horizons.

The project however, has been conducted by the consortium of Dutch research units such as: LEI, RIVM, Wageningen University and Alterra Research. Therefore, the question arises what does the process of co-production look like inside the project? The example of a choice of policy options for the EUruralis 2.0 will be presented.

Policymakers from the Policy Advisory Group proposed a list of policy questions relevant to current European policy, to which the EUruralis could answer. Scientists referred to these questions and limited them to these for which they could design models and formulas. As a result of a discussion, seven topics appeared. Therefore, Dutch policymakers organized a meeting in Amsterdam, in October 2005, with around thirty civil servants from other Member States to discuss their preferences of policy options. Scientists presented there the list of seven topics they could deal with and due to complexity of the project only 3 options could be taken into account. Hence, international policymakers prioritized policy options and three have been chosen: CAP market support policy and CAP income support policy, Bio-energy policy, Less Favoured Policy. After the final design, EUruralis scientists asked foreign scientists to review the results. One scientist from the Institute of Agriculture and Food Economics and one from the Institute of Geography and Spatial Planning from Poland were invited in order to comment on the results regarding Central and Easter Europe.

It can be noted that within the EUruralis co-production, decisions about the kind of data that are to be placed inside the project are depending more on scientists than on policymakers. Scientists are bound due to limitations in modelling and formulas, thus not every policymaker's research question can be answered. Additionally, scientists encountered obstacles concerning models' formulas during preparation of the EUruralis 2.0, which delayed releasing of this version. That was a lesson for policymakers, who understood that complicated research takes a lot of time.

Interactions between the EUruralis scientists and policymakers did not finish on discussing the scope of the project. Together they had organized a few informative meetings during development of EUruralis 2.0, where international scientists and policymakers were being invited and asked to comment on the EUruralis. There were meetings with international policymakers in Amsterdam and in Copenhagen. The Polish scientists from Institute of Agriculture and Food Economics and from Institute of Geography and Spatial Planning were invited twice in order to comment on the results regarding Central and Easter part of Europe. In addition, the EUruralis scientists and policymakers had prepared the presentations concerning development of the EUruralis 2.0 during Rural Development Conferences in Krakow, Poland

(December 2005), in Crete, Greece (June 2006), in York, United Kingdom (November 2006).

The information between civil servants and scientists was exchanged also during promotional meetings and presentations of the EURuralis, formal meetings concerning the scope of the project, by phone, mail and during informal appointments. During preparation of the EURuralis 2.0 there were many informal “working meetings,” where only one policymaker met one scientist in order e.g., to discuss issues to be presented on forthcoming conferences. In majority, meetings were held outside the LNV, in scientific organizations, where policymakers feel more independent and focus on the discussed issues.

It can be said that the scientists in the EURuralis co-production play a role of decision makers, because they propose what can be inside the project due to being bound by models and formulas and availability of data. The role of policymakers is to help scientists to bring the EURuralis results and translate them into policy actions by informing international civil servants about the EURuralis and educate them about the project utilization for their own purposes. Both scientists and policymakers express huge interest in each other work.

It is worthwhile to mention that personal relation between scientists and policymakers working for the EURuralis strengthen efficiency of meetings between these two. Both policymakers and scientists are pleased with social EURuralis life.

4.3 Polish – Dutch synergy within the EURuralis

Letter of Intent

Two factors have led to proposal of a draft version of a “letter of intent” between Polish and Dutch Ministries. First of all, Polish scientists¹⁵ were asked to check results of complicated formulas and refer them to current situation in Central and Easter Europe during preparatory works on the EURuralis 2.0. Dutch scientists have chosen the Polish because they have been working with them before on other projects and due to the fact that Poland is the biggest country in Central and Easter part of the EU.

Second of all, Dutch policymakers admitted that Polish policymakers are communicative and almost always present on international rural conferences, thus, it was easy to get acquainted with them. Perhaps that was one of the motives of proposing promotion of the project to Polish rural development policymakers.

¹⁵ These are scientists working for Institute of Agriculture and Food Economics and for Institute of Geography and Spatial Planning

Therefore, in July 2006, Polish civil servants from the MARD came into contact with Polish scientists to consider synergy in the sphere of the EUruralis. It was one of the first few meetings of civil servants and a wide variety of scientists outside the storyline of rural development documents. Representatives from such organizations participated in this meeting: Institute of Agriculture and Food Economy, Institute of Geography and Spatial Organization, Systematic Research Institute, Institute for Land Reclamation and Grassland Farming, Institute of Soil Science and Plant Cultivation, General Inspectorate of Environmental Protection and Warsaw Agricultural University. The meeting had an informative character, for these who had never heard about the EUruralis; additionally policymakers learned about the willingness of scientists to cooperate within the project. Once all expressed enthusiasm, the appointment with agents from Dutch Ministry (LNV) have been made, which ended with proposal of a draft “letter of intent”. Further steps of collaboration are expected.

4.2 Polish policymakers and scientists speak about the EUruralis

The EUruralis project (EUruralis 1.0) has been presented many times at international conferences, where policymakers, scientists and other actors across the EU could acquaint with its idea and application. Thus, some Polish rural development policymakers and scientists heard about the project, but there is only a small group of professionalists who can express opinions and comment on the EUruralis. (That was the main criteria while choosing the research observation units).

The level of information about the project differs among respondents due to characteristics of a given post and duties. Nevertheless, all questioned have judged the idea of EUruralis exactly as an “interesting venture” due to possibility: to model rural areas into the forecast on what can happen in the perspective of three next decades and to collect in an easy way basic data about rural areas in Europe even at the national level. Moreover, respondents were enraptured by the way of presenting data, which is much more attractive than traditional publication. Policymakers especially emphasised easiness of getting the results of prognosis, i.e., clear simple and colourful maps, graphs, tables designed for a wide variety of audience, even to the dullest laymen. This understandable and straightforward mode of performing the results positively influenced the perception of all stakeholders, especially policymakers who do not necessarily have to seize scientific reports. It was pointed out that the prognosis concerning rural areas in Europe is based on indicators from three groups such as environment, economic and society, which offer a possibility to

look from a broader perspective to some problems. However, proposition from policymakers appeared to extend the list of indicators in next version to these proposed by the European Commission to use in monitoring systems of rural development programmes¹⁶.

All respondents agreed that first version of the project – EUruralis 1.0 – contains a failure because on the national level it is not possible to see how changes will affect rural areas if there is so significant regional differentiation in Europe. Changes are displayed in four scenarios, and for that reason most of respondents distinguished it as positive feature; whereas, one understood this as limited number of options. She/he stressed also that it is not possible to fully predict possible changes in the project if they are treated linearly because in nature there are no linear events. Therefore, the EUruralis 1.0 was not recognized as an instrument that could support policy decisions in the realm of rural development.

The respondents claimed that the EUruralis as a project itself encourages the dialogue between policymakers and scientists within the common terminology, which could improve communication between these two groups, but none could define the kind of dialogue. Civil servants argued that it is due to lack of regular meetings and information about the project, which also prevents strategic thinking. Both Polish scientists and policymakers admitted that the EUruralis touches two worlds: the world of science and the world of policy. The EUruralis is an instrument that aggregates many disciplines and achievements of science. It was designed to support decisions of policymakers, who programme and implement rural development programmes; but, only with the support from scientists will it be possible to watch further changes in rural areas in Europe. In addition, it requires international cooperation: 1) between scientists to gather necessary data for the project, 2) between policymakers to discuss results and its consequences and 3) between policymakers and scientists to learn how to use the project and to decide on further project development. It works like a kind of decision support system (DSS), where the player decides by her/himself about the indicators and watches the results. In this way the project can illustrate and enlighten problems that were not recognized before or were not considered as urgent.

Only one scientist admitted that he has installed the EUruralis 1.0 at his computer and uses it to show the project in general as a “curio” and prepare presentations for students and other recipients in the sphere of rural development. The others said

¹⁶ Regulated by Common Monitoring and Evaluation Framework

that they were waiting for the more detailed version, where the data could be seen on regional level.

All agreed that the project is in its starting phase and it is too early to make any serious assumptions and have huge expectations while the future of the EUruralis in Poland remains unknown.

What Polish policymakers and scientists think about application of the EUruralis?

Being asked about the application of the EUruralis in Poland, scientists mentioned two ways of use 1) learn about the method and get knowledge about mechanisms building three models applied in the project through participation in the project and 2) direct usage through learning about the results of prognosis. Provided that policymakers are in favour of getting the results, the scientists could engage in both ways. Scientists were saying that to benefit from the project, Polish rural development policymakers must clearly say what their expectations are and how they want to work with such scientific resource.

Polish civil servants are still looking for directions on how to use the EUruralis. Some officers expressed concern about the success of the project in Poland because it is not clear how Polish rural development policymakers and scientists should cooperate and apply EUruralis and who will be using the project. Additionally, the innovativeness of the project, proved through its spectacular promotion, is seen as something incredible and difficult to believe.

Dutch view of collaboration with Poland within the EUruralis

It is fundamental for Dutch policymakers and scientists to consider the EUruralis not only as project designed by Dutch that suggests the Dutch way of thinking but, above all, as an instrument for all Member States. Therefore, they claim that they would like to involve as many institutions as possible from different countries; Poland is the first one to cooperate in this sense. Dutch policymakers and scientists involved in the EUruralis confirmed that they would like to cooperate with 3-4 institutes from Poland in terms of judging the results. They think that Polish researchers are better able to grasp what is happening in the rural areas in Central and Eastern Europe and they can take the lead in shaping directions of development in rural areas. They point out a similar role for Polish policymakers, who could have impact on future rural development in Central and Eastern Europe by taking the

lead on international discussions about threats and opportunities for rural areas and society.

4.4 Dutch vision of the EUruralis utilization

According to Dutch EUruralis team, the project may be employed as a top-down and bottom-up instrument. The top-down application means that the EUruralis 2.0 provides topics for debate on long-term effects that can influence rural land use and other indicators. Most people, upon introduction of the EUruralis, are mostly interested on finding information about their own country. Although this brings lots of detailed questions about the tool itself, it does not contribute to a broader discussion about main drivers affecting rural areas and elements to intervene on the European level. The EUruralis will never answer questions about what can happen in a particular country or even region. It can only zoom in specific country situations. Thus, the EUruralis is a supporting tool that might be applied in developing European rural agenda. Across the EU, policymakers are interested in long-term development and trends; they are looking for subjects they could work on together. There is a long list of issues to be discussed such as water, soil, climate changes, employment in rural areas, innovations etc. By setting down a total overview of elements influencing rural areas in Europe in long-term vision, perhaps, the EUruralis may contribute to molding a short list of important issues that should be changed or placed in European law.

As mentioned before, the tool can have also a bottom-up application. The EUruralis 2.0 presents results on the regional level; thus, if regional authorities could see what kind of possible changes and effects the project predicts for developments, they could respond to that and take it into consideration while planning future regional strategies.

According to the EUruralis scientists, Dutch policymakers could employ the projects for their own purposes. For instance, in the LNV, there are several directorates who are trying to influence the rural policy in Brussels. Dutch policymakers are struggling with those working in Brussels to get their own ideas across. The EUruralis can be already valuable if civil servants will use the tool in order to discuss inside the Ministry what should be the priority on people, planet and profit issues and what are the real problems concerning rural development in The Netherlands. Although there is no proof that EUruralis is used by policymakers at the moment, the EUruralis architects believe that it is already in the minds and practice of Dutch civil servants. They also expect that the EUruralis will contribute to Dutch rural

development by expanding integrated and suitable policy. The meetings with regional officers are planned in The Netherlands to see how regions will respond to possible threats and opportunities. The wish of the EUruralis authors is to make the EUruralis a stimulator of multi - actor modelling in The Netherlands.

4.5 Future of the EUruralis project

There are two possible tracks of further project development. The first one concerns development of the third version of the project in future. The plan for today is to present more policy options concerning a second pillar of rural development that gives support to farmers and the countryside.

The second track is to employ the results of the EUruralis 2.0 to a broader public, to policymakers who assist rural development directories. The meetings in different capitals are being planned. Dutch EUruralis authors called this 'Tour de Capital', which will include presentations of the EUruralis 2.0 probably in Rome, Lisbon, Stockholm, London and Budapest. The Budapest meeting will be a collective one for all Member States from Central and Eastern Europe.

The first presentation of EUruralis 2.0 took place on the 15th of May, 2007 in Germany. The plan was to have a presentation and discussion about the tool; however, some people from the German Ministry were not able to come. Hence, the meeting has been changed into a dinner with people from both Dutch and German Ministries.

4.6 Co-production model in the EUruralis?

The model of relation between policymakers and scientists inside the EUruralis is an example of co-production. There were/are many actors involved in the process of developing the project such as representatives from the LNV, some policymakers – contributors from other Member States, scientists from the LEI, RIVM, Wageningen University and Alterra Research and other scientific units in Europe. Obviously, Dutch policymakers and scientists are the main authors of the programme and other stakeholders are contributing and commenting on assumptions of the EUruralis. The EUruralis 2.0 as a product has been developed through stages presented in the figure below.

Figure 3. Stages of Co-production in the EUruralis.



On every stage of co-production, intensive interactions were being held. Civil servants asked scientists many research questions. Scientists could not answer all of them due to complicated models and formulas. Thus, scientists and policymakers met together and discussed what kind of questions they could answer and what kind of information could be in the programme. Sometimes, public workers from other Member States were asked to comment on the choice of the research questions. After deciding the scope of the research, experts built the models. While conducting research they were informing civil servants about the progress and possible obstacles, upon request of the policymakers. Afterwards, scientists presented the results to Dutch civil servants. Moreover, international scientists consulted the results and checked their reliability.

Preparing for the EUruralis promotion included making presentations and informative leaflets for other stakeholders, so civil servants sat together with scientists at the table and discussed the final design. Promotion of the EUruralis took place at many international conferences and meetings concerning the future of rural development in Europe, where the EUruralis policymakers and scientists together advertised the project and its application.

The large number of interactions proves that the EUruralis co-producers are very active. Policymakers not only ask research questions and promote the project but also translate the results into policy actions. However, scientists seem to steer what

will be inside the project as they are bound to some extent with limitations of models.

Both share and utilize their knowledge, skills and experience and place trust in each other; hence, the co-production is very efficient. Policymakers perceive scientific knowledge as enlightenment and new way of thinking. They express interest in each others' job experience. Moreover, good personal relations between EUruralis architects and openness for cooperation with international actors support the process of product development.

Chapter 5 Analytical considerations

5.1 Differences between models of co-production in Polish rural development practice and in the EUruralis

With regard to theoretical framework of this thesis, this section will show that the process of co-production looks differently in various environments and that these differences relate to knowledge utilization by policymakers. To begin, the dissimilarities of two models will be presented.

The first characteristic that distinguishes co-production in rural development practice in Poland and in the EUruralis is the attitude of co-producers to each other. The EUruralis scientists and policymakers are inquisitive to the worlds of one another. On one hand, policymakers are looking for boundaries in which science could operate by asking many research questions. The scientists, due to limitations of modelling and formulas are able to answer only a few. On the other hand, scientists are interested in finding out what policy process looks like and how it should be organized. Such attitude of both parties leads more often to interactions, thus understanding and agreement on certain issues.

In Poland, rural development policymakers and scientists are pushed to interact through framework of official cooperation between the Ministry and some scientific units. Additionally, the rural development documents required scientific basis, thus, scientists were employed to support programming and implementing of the RDP 2004-2006 and RDP 2007-2013. The recognition of science and the interest in scientific results is just being born; hence, there are not yet regular interactions and information exchange with scientists.

The second characteristic differentiating co-production is the institutions' involvement into the process of knowledge co-production. The EUruralis co-producers cooperate intensively with foreign institutions. The aim behind it is that they do not want the EUruralis to be perceived as a project presenting only the Dutch way of thinking. The EUruralis policymakers discuss with civil servants from various Member States their preferences about the scope of the project. Additionally, the results in the programme need to be checked if they keep external and internal validity. Therefore, the EUruralis scientists consult results with experts from Poland, United Kingdom and Italy.

Polish rural development policymakers follow the instructions provided by the European Commission while programming policy documents. They utilize experience, skills and knowledge gathered by scientists during working for national

and international projects. However, civil servants are still not internationally oriented. The lack of ability to speak foreign languages constitutes a barrier for them to communicate with international actors. Moreover, often the Minister of Agricultural and Rural Development appoints high civil servants, who represent older generations¹⁷, to directors of departments. These people, due to growing up in different system, have different habits and do not often see any need to cooperate with international stakeholders. Therefore, they do not benefit from the experience of different Member States while creating rural development strategies. As a consequence, the co-production in Poland is assured by transdisciplinarity, but only on the national level, which makes it difficult to perceive rural development in Poland in the European context.

The third characteristic concerns particular stages mentioned in the EUruralis co-production. In majority the EUruralis policymakers ask questions to scientists and later a discussion is held on what scientists could work on and what can be the scope of the research.

In rural development practice in Poland, civil servants are not used to asking many research questions and discussing their scope with experts. As a consequence, policymakers' research proposals are often not precise, so scientists often provide answers instinctively. Unfortunately, not all research matches up with needs of policymakers, who are instructed by Council Regulations of the European Commission. That is why some research remains unused. It would be easier to co-produce if both scientists and policymakers had known in which framework the others operate.

During the time of conducting research, the EUruralis scientists inform policymakers about the progress of the research. In case of technical obstacles and possible delays policymakers are immediately informed. At the end, the scientists present the results to policymakers and consult with foreign contributors.

It seems that there are no interactions between Polish rural development policymakers and experts while scientists are carrying on analysis. Mostly, civil servants receive research results in a form of a written report. Only if policymakers find difficulties in understanding the results do they directly ask scientists for explanations.

As described before, the EUruralis architects collaborate also outside the EUruralis production while promoting the project and organizing meetings. Fortunately, it happens that Polish policymakers together with scientists not only deal with

¹⁷ These are people who grew up in communist regime.

programming rural development documents but also participate together in conferences and official meetings where experts advise civil servants and support their arguments.

The fourth difference in models of co-production is the leadership. In terms of the scope of the EUruralis programme, the deciding voice belonged to scientists, who are bounded to some extent by models and formulas. Based on information on what can be done by scientists, further discussions took place on how scientific results could be applied and utilized in the project. That is why, the EUruralis policymakers cannot take the leadership in deciding about the content of data in the EUruralis.

In Poland, for instance, during the process of programming Agri-environmental measures, all participated stakeholders could propose their design on particular packages under these measures. Although all suggestions have been heard, the final decision about the shape of the measure is in hand of policymakers, who prepare the final version of the document with regard to Council Regulations. Additionally, policymakers decide alone in what way they utilize the knowledge gathered from scientists.

The characteristics presented above, that contrast the two models of co-production, influence the process of knowledge utilization by policymakers and can be related to the stages of Knott and Wildavsky (1980), which were presented in the theoretical framework of this study.

The interest of co-producers in getting insight into each other's environments favours interactions and contributes to building trust. Policymakers refer more often to the expertise of authors, who are considered as trustworthy and reliable.

A wide variety of institutions involved in the process of co-production ensures to see issues in a broader context and benefit from experience of others. The usage of experience, skills and knowledge may help in avoiding the same mistakes.

The discussions concerning the scope of the research question directly influence receiving research pertinent to policymakers work. The presentation of the results by scientists assures understanding of the results by civil servants. The involvement of policymakers into promotion of the research refers to the "discussion stage" of Knott and Wildavsky (1980).

With regard to leadership that differentiates co-production in the EUruralis and rural development practice in Poland, it can be said that if civil servants decide what kind of scientific knowledge they refer to, hence, they determine if the research results will influence the shape of the policy document.

The table below illustrates the dependency of the above mentioned characteristics with stages of knowledge utilization. (Knott and Wildavsky, 1980)

Table 6. Differences in models related to stages of knowledge utilization of Knott and Wildavsky (1980).

Differences in co-production	Stages of knowledge utilization	Explanation
Positive attitude and interest	Stage 4 - Reference	Policymaker refer more often to university research
A wide range of institutions involved in co-production	Stage 4 - Reference	Policymaker refer to experience of scientists
Discussion the scope of the research question	Stage 1 - Reception	Policymaker receive expertise pertinent to his work
Presenting the results	Stage 2 - Cognition	Policymaker understand the university research
Promotion	Stage 3- Discussion	Policymaker participate in meetings for popularization of the research
Leadership of policymakers	Stage 6 - Influence	Policymakers decide if university research influence his decisions

More differences in co-production?

This thesis indicates two types of co-production: in rural development practice in Poland (Co-production A) and in the EUruralis project (Co-production B). The most important characteristic that distinguishes these two types constitutes forms of knowledge utilization by policymakers. The table below summarizes which forms of knowledge are utilized either by Polish or EUruralis policymakers.

Table 7. Forms of knowledge utilized by policymakers.

	Polish policymakers	The EUruralis policymakers
	Co-production A	Co-production B
Forms of knowledge utilization	Instrumental, tactical, political, symbolic, conceptual	Enlightenment, encouragement, conceptual and instrumental use Political

With regard to the theoretical framework of this study, Polish policymakers benefit from instrumental and tactical use of knowledge, which indicates a model of knowledge production. However, they are also familiar with forms of knowledge utilization, which belongs to the co-production model such as conceptual, political or symbolic use.

It seems that instrumental and tactical uses of knowledge are remains from model of knowledge production that probably existed in Poland before accession to the EU. There are other characteristics of knowledge production model in rural development practice in Poland. Firstly, policymakers distinguished two kinds of research. The one mentioned group represents research not ordered by policymakers but conducted by scientists in the scope of some national or international projects. Such research might accidentally fall into policymakers' hands, however, will be utilized only if it fits to civil servants' needs. Secondly, policymakers do not participate in the process of conducting analysis, solely when discussing the application of the results, like in case of framing agri-environmental packages. Thirdly, when civil servants ask for research, they do not discuss the scope of the research question. Fourthly, the level of knowledge utilization by policymakers is low, circa 30% of information gathered from scientific reports. In addition, policymakers decide alone about the way and extent of knowledge they will use. Finally, the information might flow one-way or multiple ways depending on the institution that a scientist represents and his private relation with particular civil servant. If such scientist works for the Institute of Land Reclamation and Grassland Farming for example, the probability of the multi – flow of information is very high. Since Poland started preparation to join the European Community, rural policy was subjected to progressing changes. The support from the pre-accession programme like PHARE and SAPARD has been used to invest in Polish administration and to programme the RDP 2004-2006. Civil servants did not have enough knowledge and scientific data to design the policy document alone. Thus, they asked scientists for help and support, and this lead to the development of 'epistemic community' that includes both civil servants and experts from scientific units and other organizations like NGOs. The increased interactions between the members of 'epistemic community' changed the relation from one-sided to two-sided. Sometimes scientists together with civil servants participate in conferences and official meetings, where scientists are employed as advisors. The strong personal relations between certain civil servants and scientists and their engagement in programming e.g., the RDP 2004-2006 lay foundations for model of co-production. The co-production in rural

development practice looks like an intermediate form between knowledge production (model 1) and knowledge co-production (model 2).

5.3 Mediators

How to build a bridge for a gap between policymakers and experts? Perhaps someone who is in-between science and policy is needed. For the purpose of this thesis, I call her/him 'a mediator' and define this as 'a person or group of persons produced by the interactions of two unlike worlds, world of science and world of policy'. These are people, who have tried working for both scientific and policy organizations and they understand both worlds. Mediators could be compared to entrepreneurs¹⁸ who have a good knowledge of what goes on in different streams, the stream of policy, and the stream of politics.

Mediators might fulfil a role of translator and facilitator. A job of translator is to follow research novelty in order to translate and interpret scientific results to policymakers. Mediators should participate in national and international conferences and seminars, as well as in research projects and programmes. Assuming that a mediator is a trusted, reliable and valuable person in the eyes of policymakers, apart of translating, she/he could advise to turn attention to some scientific events and organize a sort of scientific promotion for a very specific audience such as policymakers.

A role of facilitator could be essential in communication. For human relations, forms of organizations, legal institutions, knowledge and skills in some sort of sense must be managed (by a facilitator and at times by the stakeholders themselves) so that new patterns of coordination could be worked out. The emergence of new practices and forms of coordination depends in essence on joint learning, 'joint effort' and negotiations between different stakeholders. This calls for a communication specialist or a facilitator to conduct the communication and safeguard the social learning process among policymakers and scientists.

The choices of mediators in terms of interpretation of scientific results and directions of facilitating discussions might be dictated by rationalism – “when faced with several courses of action, people usually do what they believe is likely to have the best overall outcome” (Ward, 2002). Mediators seem to have “all rational capacity, time and emotional detachment necessary to choose the best course of action, no matter how complex the choice is” (Ward, 2002).

¹⁸ An entrepreneur is a term introduced in analytical perspective of Multiple Streams by Kingdon. (Zahariadis,1999).

Obviously, a mediator should roughly know what can or cannot be done; the role should be specified as either civil servants or experts. However, there is a concern that mediators may not predict the consequences of their actions and might be self-interested. They might also have limited information and time. They may use the well-known sources of information and evolving routines, which endanger at a wide glance a particular issue and context. Additionally, if humans cannot be rational if taking into account feelings, altruism, unconscious motives, dilemmas, decisions, conflicts and uphold irrational commitments, why would mediators be?

During the interviews session, I met one mediator who works for the EUruralis. He is a scientist; however, he had a privilege to work in the Ministry of Agriculture, Nature and Food Quality (LNV). He found working in the LNV as an extremely interesting experience and claimed that this helps him to understand better how the world of policy operates. At the moment, he is the EUruralis VIP¹⁹. I had a pleasure to participate in a couple of meetings with the EUruralis team, where I observed that this kind of mediator fulfilled the role of facilitator and translator in discussions. I assume that in this way he contributed to the process of the EUruralis co-production.

So is there any job for mediators in Polish rural development co-production?

Mediators could be employed temporarily to contribute to the learning process of policymakers and scientists while discussing the scope of the research questions, informing about the progress of conducted research and promoting scientific results. Additionally, they can encourage the dialogue between civil servants and experts and be facilitator during meetings in order to help to deal with the problem of communication. They could be some kind of relay between world of scientists and world of policy at the national and international level and participate in conferences on behalf of policymakers if necessary.

5.4 Concern behind environmental knowledge

The 'epistemic community' in rural development practice in Poland focuses around a wide variety of scientists representing various institutions and civil servants. Inside this network an expert group exists, who closely cooperate with officers and additionally have very friendly and good private relations with them. These experts represent, among other things, the Institute of Reclamation and Grassland Farming, the Institute of Soil Science and Plant Cultivation, the Naturalistic Club and the Polish Associations of Birds Conservation. It is not difficult to notice that these

¹⁹ VIP – Very Important Person

institutions in majority occupy with research concerning environmental sciences in the context of rural development, and as presented in chapter 3, the environmental knowledge was recognized as the 'number one' in terms of utilization among other types. It seems that this friends-group, which consists of variety of actors from a public to a non-public sector, is actively concerned with particular environmental issues in Poland. They create a coalition who share the same set of norms and believes. They meet on events such as observing birds, counting storks and scything meadows on Biebrza River²⁰. It puzzles me, why this environmental knowledge became a glue of this coalition. Is it because the EU cares so much about the environment? Or is it really the environmental awareness of some well-educated civil servants and scientists? Can someone who is not sharing such believes, due to a different occupation, easily access this coalition? Isn't this coalition an obstacle for cooperation with other experts from other scientific units in rural development practice in Poland?

The rural development is a complex phenomenon that plays a vital role in Poland. Hence, there is a need for cooperation with experts from different scientific disciplines such as economists, planners, sociologists and investors. Can the present environmentally-oriented coalition alone assure multidimensional development of rural areas, which satisfy rural society, especially farmers and environmentalists at the same time?

5.2 Does the EUruralis fit or misfit into the Polish rural development institutional setting?

It is very difficult to answer the question if EUruralis fit or misfit into the rural development institutional setting. I justify it with the fact of the existing intermediate model of co-production in Polish rural development practice, which has some drawbacks such as:

- Process of policymakers-scientists interacting is bounded in the framework of rural development documents.
- The scope of cooperation between policymakers and scientists is not yet defined. There are no discussions concerning extent of research questions, no interactions during conducting research, no promotion of scientific results.
- Co-producers represent national organizations, hence, are nationally-oriented.

²⁰ Biebrza is a river in north-eastern Poland, a tributary of the Narew river with a length of 155 kilometers and the basin area of 7,057 sq. km. Today the river is best known for the vivid wildlife in the peat bogs and marshes in its flooding areas. (Homepage of Wikipedia, 2007)

- Decisions about the way and type of knowledge utilization are made by policymakers but not as an outcome of discussion with other stakeholders.
- Policymakers will not fulfil tasks that are not in their responsibility.
- There are many things happening around, e.g., political turnovers or complaints from farmers, which distract policymakers from focusing on their work.

These hindrances are obstacles for taking root and utilization of the EUruralis project by both policymakers and scientists. There are too many unknowns such as:

- lack of clear goals of the EUruralis utilization
- lack of definition of the Polish EUruralis users
- lack of scope of cooperation between civil servants and scientists within the EUruralis
- lack of directions for the EUruralis development (more policy or scientific instrument?)

Furthermore, there are still too many civil servants around, from older generation, who do not see any need for discussions and do not believe in a supportive instrument such as the EUruralis. What is more, policymakers are burdened with a lot of work responsibilities and may have less time for exploring the EUruralis.

Therefore, if the EUruralis does not fit into the current rural development institutional setting, there is a group of civil servants and scientists who is interested in the project. It can be said that interactions and the process of creation the RDP 2004-2006 and RDP 2007-2013 influence especially on awareness of civil servants who appreciate the EUruralis initiative. Polish rural development policymakers voluntary agree to take advantage of the project by approval of the 'Letter of Intent' between the MARD and the LNV concerning the EUruralis. This letter gives clarity that both Polish civil servants and scientists are interested in EUruralis and willing to utilize it.

The success of the EUruralis in Poland depends on flourishing the introduction of the tool to policymakers and scientists, on what kind of priority label the project will get from policymakers. To plan the EUruralis application all unknowns must be eliminated and the information about the goals and users of the project, the scope of the cooperation and the directions of the EUruralis development should be provided by civil servants.

Chapter 6 Conclusions & Recommendations

One of the aims of this study is to formulate recommendations for policymakers on how to introduce and apply the EUruralis project in rural development practice in Poland as well as how to improve the process of knowledge production and knowledge utilization. Therefore, this chapter systematically answers the five research questions formulated in the introductory chapter and ends with the recommendations sheet. Answers to each research questions have been extracted from findings presented in previous chapters.

Research question 1

What is the model of relation between Polish rural development policymakers and scientists at present?

This study shows that the present model of relation between Polish rural development policymakers and scientists is an intermediate form between the knowledge production and knowledge co-production. The relation is two-sided but semi-open due to environmental coalition. Co-producers constitute a sort of 'epistemic community', which includes civil servants, scientists and NGOs' workers. The affair between policymakers and scientists is based on official supervision of the Ministry of Agriculture and Rural Development under some scientific units (appendix 2). The Ministry designates tasks in order to have scientific support ad hoc. Moreover, the Ministry is in charge of approving and examining long-term research programmes of the institutes.

The cooperation of civil servants with representatives from particular scientific units looks different for each institute. For instance, there are scientific units such as the Institute of Reclamation and Grassland Farming and Institute of Soil Science and Plant Cultivation, with which cooperation is fruitful, efficient and rather personal, which results in quick, multi-flow of information.

The tradition of collaboration between policymakers and scientists grew up during preparation of the "Rural Development Plan 2004-2006" and is still in rural development practice. Co-producers interact during programming and implementing of policy documents and any formal or informal interactions concerning the storyline of a particular policy document. Policymakers are not involved in the process when scientists are conducting research. The frequency of meetings and the flow of information depend on stage of document preparation as

well as the necessity to consult and explain scientific results. However, there is no practice to discuss the scope of the research with experts and to inform policymakers about the progress of the conducted research. Policymakers are often not clear when they ordered research. They also demonstrate lack of planning in advance in their needs for scientific expertise, so all orders are ad hoc. Perhaps, that is the reason of cultural gap between policymakers and scientists in terms of communication.

Hopefully, scientists still show initiatives to share scientific results with policymakers by inviting them to scientific conferences and seminars. Sometimes, civil servants together with experts participate in conferences and official meetings, where scientists play a role of advisors and supporters of policymakers' argumentation.

An important fact is that civil servants have good informal affairs with some scientists as a consequence of having the same interests and beliefs.

In the co-production process, civil servants make decisions regarding the type and form of knowledge utilization. Although, the opinions of all experts and other stakeholders are always heard, policymakers choose information that is necessary for them and then they decide alone about the final texts of policy documents according to the rules imposed by the European Commission.

While in process of production, co-producers gain from each other knowledge, experience and skills, but they do not have yet the internationally-oriented glance to look at rural development in Poland.

Research question 2

How do Polish rural development policymakers utilize scientific knowledge?

Science is considered by policymakers to be a crucial part of rural policy in terms of 1) utilization of knowledge and experience of scientists in programming policy documents, 2) transferring knowledge know-how to farmers through advisory organizations. Science has been also estimated as a reliable source of information, which, to some extent, is independent and free of political influence. Nevertheless, scientists during co-production may try to force issues into policy; ornithologists will try to protect as many birds as possible; botanists will try to protect as many habitats as possible, etc. In Polish intermediate co-production, civil servants play first fiddle, so they decide about the type of knowledge while taking into account limitation from European Commission or political pressures.

In practice, policymakers filter scientific information by taking only what is necessary for a particular document. Transferring the knowledge to a policy document depends on expertise and need of using scientific data. Information can be applied directly, like in the case of statistical data or the need to be rewritten or simplified e.g., to elementary statistical information so as to draw conclusions and apply them directly while programming a particular measure.

In general, policymakers have identified two groups of research. The first group characterizes research ordered by policymakers for a specific need e.g., to find out what is the stocks of cattle in the “Podkarpackie” region or to propose solutions to existing problems. Such information is used instrumentally and is fully utilized as they provide a response to a specific need of policymaker. The second group represents not ordered research but research conducted by scientists in the scope of long-term programmes or other projects. They might accidentally fall into policymakers’ hands and be utilized when necessary.

Knowledge utilization became of material impact during preparation the “Rural Development Plan for Poland 2004-2006”. Policymakers benefited from reports concerning current situation of rural areas, which were showing disparities, gaps and potential for development. Elaborate reports included recommendations and proposals of measures that could be in the RDP 2004-2006. Scientific journals presented ideas about the shape of measures and its level of financial support for farmers and areas eligible for receiving the support. Policymakers thus used indicators, prognosis and evaluations established by experts. That is an example of conceptual use of research. In general, the scientific reports delivered to policymakers included statistical and economical data, knowledge concerning agricultural production and agricultural markets, designation of high-value environments, inventory of important species of fauna and flora in rural areas, education among rural population and infrastructure, unemployment and access to internet. Among all the research, policymakers recognized the most important type of knowledge, i.e., environmental knowledge.

Not only have officers taken advantage of written research reports but also from scientists’ experience. Skills and experience of experts was especially applicable while in discussions about evaluating nature and developing a monitoring system. Additionally, policymakers use knowledge outside preparations of policy documents. They admitted to sharing the knowledge with farmers, foresters, Agency of Restructuring and Modernisation of Agriculture, Local Governments, Agricultural Chambers and Agricultural Advisors.

In addition, civil servants see knowledge as a tool to extend education of the scope of nature protection and maintenance of cultural values in rural areas. They utilize knowledge as argumentation while giving presentations on international and national forums, or just to pressure the Minister of Agriculture and Rural Development and force certain issues into political agenda. In exceptional cases, knowledge can be used as an excuse, for high authorities, of not taking actions due to lack of scientific data.

Some civil servants admitted to applying gathered knowledge according to personal interests and personal development, e.g., while writing PhD theses or articles.

Characteristics of intermediate co-production

The table below presents the characteristics of the intermediate co-production model of rural development practice in Poland and summarizes the answers to the first and second research question.

Table 8. The characteristics of the intermediate co-production.

INTERMEDIATE CO-PRODUCTION	
Characteristic	Description
Relation	Two-sided, semi-open due to environmental coalition
Co-producers	‘Epistemic-community’ whose members represent national organizations
Interactions	<ul style="list-style-type: none"> • In the framework of official co-operation of the MARD with scientific units • Within the storyline of the RDP 2004-2006 & RDP 2007-2013 • Formal and informal
Flow of information	One – way and multi – flow, depending on institution that scientist represent and personal policymaker-scientist relation
SRAGES OF CO-PRODUCTION	
Asking RQ	Policymakers do not ask many research questions
Discussion scope of RQ	No
Conducting research by scientists	No interactions while process of conducting research
Presentation of the results	No presentations of the results to policymakers
Consulting the results	Sometimes, in case the results are not clear for policymakers
Promotion the results	No
Interactions outside storyline	Yes, during conferences and official meetings, where scientists play the role of advisors.
Engagement in co-production	Engagement of particular scientists and civil servants who are members of ‘epistemic community’
Decisions about forms and types of knowledge utilization	In hands of policymakers and according to the rules imposed in Council Regulations by European Commission
Forms of knowledge utilization	Instrumental, Conceptual, Political, Symbolical, Optionally - Tactical

Research question 3

What kind of policymaker-scientist relation does EUruralis project promote?

The EUruralis promotes co-production. The tool itself is a product of policy – science interconnections. At first, two professors from Wageningen University and Alterra Research expressed their concern about the future of rural development in Europe. Policymakers for the LNV took full advantage of this matter by introducing the EUruralis project when The Netherlands was chairing the EU in 2004. The project was an idea of open – minded policymaker who came to scientists and asked about the possibility of carrying out programme, which would include a prognosis of what might happen in rural areas in Europe in the forthcoming years.

The EUruralis has been developed by scientists who represent the consortium consort of Dutch scientific organizations such as LEI, RIVM, Wageningen University and Alterra Research. The scientists from foreign institutions from Poland, Italy and United Kingdom were employed to check the concreteness and possibilities of the results.

As a whole, the EUruralis process of co-production clearly distinguishes stages during which policymakers and scientists interact. Although in majority, policymakers ask research questions, both policymakers and scientists are engaged in discussions concerning the scope of the research. During conducting the analysis, scientists inform civil servants about research progress and eventual delays. Experts also present the results to policymakers. Both parties are involved in preparing presentations, publications and official conferences for the project promotion.

Scientists, as co-producers, are limited due to complex models and formulas, hence they steer to some extent what kind of scientific information is possible to put inside the programme.

The task of policymakers is to translate scientific results to policy actions by promoting the tool to other Member States and encouraging them to its utilization.

Both scientists and policymakers attract each other, which results in the interests of scientists on how policy process should be organized and in interests of policymakers on how scientists' work is bounded due to models and formulas.

Additionally, both groups value good informal relations that arose during the EUruralis co-production.

Research question 4

What are the differences between models of relation in the rural development practice in Poland and in the EUruralis project?

The answer to this research question has been already described in chapter 5. Hereby, a simplified table that presents all the most important either similar or dissimilar points.

Table 9. Differences in co-production models.

Differences	Intermediate Co-production in Poland	Co-production inside EUruralis
Interest of policymakers in world of science	Not really, only for personal needs while developing own skills	Very much, looking for boundaries in which scientists could cooperate
Interest of scientists in policy world	Not really, everyone has their own work to do	Very much, looking for appropriate way of making decisions
Flow of information	- Yes, but based mostly on personal relation of particular officer with particular scientist,	Multiple flow of information
Involvement of Institution	Yes, but only at the national level	Yes, at national and international level
Outside interactions	Sometimes, on the conferences and official meetings in Brussels, where scientists are advisors of policymakers	Yes, organizing together conferences and meetings for other Member States
Leadership	Policymakers	Scientists, who are limited due to complexity of models and formulas.
<u>Stages of co-production</u>		
Precise formulating of needs	Depends on the subject and on who is asking (some policymakers may be more precise than the others)	Yes
Discussion about research question	Depends on the personal relation between particular policymaker and scientist	Yes
Informing policymakers about the research progress	No	Yes
Presenting the results	No	Yes
Promotion of the research results	No	Yes

Research questions 5 (a and b) - RECOMMENDATIONS

This study is addressed to rural development policymakers in Poland. It makes recommendations as to questions 5a and 5b. Hopefully, policymakers will use it as a support to find directions of the EUruralis application.

How can EUruralis be introduced and applied in Polish rural development practice?

Until now, the EUruralis has led to two meetings in Poland, where a wide range of experts met with policymakers from the initiative of the MARD. Although the conversations ended without any specific outcomes, my analysis showed that both groups are interested in cooperation in the realm of the EUruralis.

The authors of the EUruralis are going to introduce the project in some Member States; however, it is in the competence of a particular country to decide about utilization of the tool itself. Polish civil servants do not have yet precise aims concerning application of the project, therefore, this section is supposed to give indications to them about the EUruralis utilization.

Policymakers in Poland could use the tool similarly to Dutch policymakers in order to discuss inside the Ministry what should be prioritized on people, planet and profit issues and what are the real problems concerning rural development in Poland. However, before any discussion takes place, it is necessary to introduce the project to civil servants and scientists who are not yet familiar with the project, for instance, in the form of a two-day-workshop, as presented below in table 10.

This workshop is an opportunity to get inside of the EUruralis and examine its eventual application inside and outside the MARD. The scientists, who seem to grasp better how the project works, could guide the meeting. The formula of the workshop requires interactions and discussions with scientists, where the rules of the client, who demand and the service provider are not obligatory. Both policymakers and scientists are equal in these discussions.

For the purpose of this workshop, it is advisable to organize the meeting outside the MARD so as to separate policymakers from the running issues and their responsibilities and focus their attention on the EUruralis.

Supposedly, it might be difficult to incorporate the EUruralis in the same way into rural development practice in different countries due to different priorities, beliefs or just because of distinctive process of knowledge (co)production and institutional

setting. Each Member State will have to look for his own ways and opportunities for the EUruralis development.

Table 10. The Plan of the workshop.

Plan of the WORKSHOP			
Day	Aim	Activity	Time
1	Explaining goal of workshop, which is to introduce EUruralis	Opening the workshop	15 min
	<ul style="list-style-type: none"> to show programme output to show possible ways of looking for the results (graphs and maps) to explain scenarios to interpret the results in the context of rural development in Poland point out interesting results 	“Scientists introduce the EUruralis”	1-1.5 hour
	<ul style="list-style-type: none"> this is a task for policymakers and some scientists to play with the tool and familiarize with results to look for results by doing an assignment prepared by scientists 	“Lets play”	2-3 hour
	<ul style="list-style-type: none"> to have a discussion about findings, to compare results to discuss possible application of the project in the Ministry to think about a list of important issues with regard to rural development to discuss with scientists to think about a list of subject for future research for scientists 	“Policymakers debate”	1 hour
2	Discuss the list of issues urgent in rural development from scientific perspective	“Scientists debate” (optional)	1 hour
	<ul style="list-style-type: none"> to discuss the findings of EUruralis to discuss possible directions for future rural development in Poland to discussion lists of urgent issues in rural development to consider introduction of EUruralis to other stakeholders to discuss future need for scientific knowledge summary 	“Policy-science debate”	To be decided

- **Role of scientists in the EUruralis introduction and utilization**

Polish scientists might utilize the EUruralis to learn about methods and mechanisms building three models applied in the project through participation and cooperation with scientists working for the project. They could fulfil a role of experts of the results for Central and Easter Europe who can refer the results to current situations in rural development and credit the data. They could also attract attention of policymakers from Central and Easter Europe to certain issues that may affect rural areas in future.

On the national level, scientists could be employed as translators of scientific information and advisors for Polish policymakers during the EUruralis workshop. They could make it clear for policymakers how the EUruralis works and what kind of results should be considered while thinking about future rural development in Poland.

- **Role of policymakers in the EUruralis introduction and utilization**

Hopefully, the workshop might have an indirect impact on policymakers who should orient rural development in Poland in the context of the EU. Additionally, they could rethink future needs for scientific knowledge in the scope of rural development.

The goal of the workshop is also to reconsider further application of the EUruralis, which can be seen as a supportive instrument while discussing possible threats and opportunities for future Polish rural development. The EUruralis might help to look on rural development from multi actor, multi aspect and multi level perspectives that should be taken into account while programming policy documents. The outcomes of policy-science debates during the proposed workshop may clarify postulates that should be presented in an international arena. Perhaps, the project introduction will show Polish policymakers different perspectives to look at rural development in Poland.

It is important to mention that this workshop, if carefully held, may be an example of new way of leading co-production.

Possibly, the data gathered from the EUruralis could be used as an argument for politicians and as a base for writing scientific articles by policymakers.

Lessons to be learned

The EUruralis project, apart from intended goal, fulfils a role of an invisible educator contributing to science-policy interconnections by encouraging the dialogue between policymakers and scientists about the future of European's rural areas within the common language.

The authors of the EUruralis discovered that communication is the most crucial and significant aspect of the project in order to learn what humans want from each other. Moreover, if scientific results are supposed to be utilized in a quickly changing policy process, policymakers should take into consideration that researchers need more time to develop any instrument. Therefore, policymakers must be more patient. The EUruralis was about to be ready last year, however due to technical problems concerning modelling and formulas it is released just now. Laziness of scientists was not a reason of this delay.

The case of the EUruralis shows that it is not enough to develop an instrument to support policy discussion. The throughout application of such instrument should be proposed as well as the process how people will use it and what kind of people, how it should be organized and what are the expected outcomes. The EUruralis success and usage heavily depends on what kind of priority label policymakers assign to the project. The presentation of EUruralis in Germany on the 15th of May, 2007 proved that if the EUruralis does not have a priority, it will only lead to informal considerations about future of rural areas in Europe.

How can EUruralis contribute to rural development practice?

The EUruralis can contribute to rural development practice in Poland by improving patterns in current intermediate co-production. It can support policymakers in:

1. Developing own way of discussion with scientists
1. Enlarging the 'epistemic community' with representatives at least from such organizations: Institute of Agriculture and Food Economics, Institute of Agriculture and Rural Development, Institute of Geography and Spatial Organization
2. Having more interest in each other work in order to understand the framework in which scientists / policymakers operate
3. Discussing the possible directions of rural development in Poland in the context of EU
4. Having more interactions with scientists in every stage of process of co-production to avoid misunderstandings concerning the scope of the research question and to know about the research progress
5. Making decisions according to the outcomes of discussions rather than according to policymakers needs
6. Being more patient while waiting for scientific reports
7. Finding new ways of knowledge utilization such as new thinking and enlightenment
8. Finding new topics to cooperate with scientists

General recommendations for policymakers that may contribute to improvement of relation with scientists and knowledge utilization

This study has identified some characteristics of policymakers' practice that should be improved in order to enhance cooperation with scientists and process of co-production. Hereby, there is a list of recommendations for policymakers to re-examine.

1. Plan your needs for research in advance, if possible, so as to avoid unnecessary rush
2. Try to precisely formulate research questions for scientists
3. Discuss your research questions before conducting research so as to avoid wrong answers
4. Take care about the way you communicate with scientists
5. Try to establish rural policy agenda in order to control your actions and avoid spontaneous movements
6. Look for the subjects and projects you could work with scientists on
7. Open for social consultancy and let all stakeholders to be heard
8. Participate in conferences and seminars organized by scientists when you are interested in the subject
9. Invest in your personal development by participating in international workshops, meetings; by writing scientific papers
10. Be internationally oriented
11. Be open for innovations
12. Use the EUruralis in order Poland could be heard and seen on international rural development arena as influential Member States

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Appendices

Appendix 1 - List of research interviewees

Interviewees from the Ministry of Agriculture and Rural Development in Poland.

NAME	Position	Department
Nina Dobrzyńska	Director	Department of Programming and Analysis
Anna Klisowska	Chef of the Division of Environmental Protection in Rural Areas	
Marcin Zieliński	Chef of Division of Programming	
Marek Ignar	Chef of Division of Monitoring	
Marek Rudnicki	Chef of Division of Evaluation and Analysis	
Michał Rewucki	Senior officer in the Division of Environmental Protection in Rural	

Interviewees from scientific units in Poland.

NAME	Institution
Dr. - Zbigniew Floriańczyk	Institute of Rural and Agricultural Development, General economics department
PhD Student - Wioletta Wilk	
Associate Professor - Jerzy Bański	Institute of Geography and Spatial Organization, Rural areas study group
Associate Professor - Wiesław Dembek	Institute of Land Reclamation and Grassland Farming, Department of nature protection in rural areas

Interviewees from the EUruralis project.

NAME	Position	Institution
Willem Rienks	Researcher agriculture and spatial structure	Alterra Wageningen University and Research, Department of Landscape
Hayo Haanstra	Coordinator Environment	Ministry of Agriculture, Nature and Food Quality, Department of Rural Affairs
drs. H.A.R.M. van den Heiligenberg	Senior scientist sustainability and rural areas	Environmental Assessment Agency

Appendix 2 - List of scientific institutions involved in preparation of Rural Development documents.

Type of institution	Name of the institution	Supervised by the Ministry
Scientific Institutes	Institute of Land Reclamation and Grassland Farming	+
	Institute of Soil Science and Cultivation	+
	Institute of Agriculture and Food Economics	+
	Institute of Agriculture and Rural Development	
	Institute for Buildings, Mechanizations and Electrification of Agriculture	+
	Forest Research Institute	
	Institute of Geography and Spatial Organization	
	Institute of Environmental Protection in Warsaw	
	Institute of Nature Conservation in Cracow	
Universities	Warsaw Agricultural University	
	University of Warsaw	
	Warsaw School of Economy	
NGOs	Naturalist Club	
	Polish Associations of Birds Conservation	

Description of the Institution supervised by the Ministry of Agriculture and Rural Development

1. INSTITUTE OF LAND RECLAMATION AND GRASSLAND FARMING

According to the status assigned by the Polish Ministry of Agriculture and Food Industry (the former name of present the Ministry of Agriculture and Rural Development) the Institute conducts research and application works in the field of environmental sciences and agronomy. These activities are focused around topics:

- preservation of natural values and rural environment
- water management issues in rural areas
- irrigation and agromelioration of agriculture lands
- flood and droughts problems
- sanitary issues in rural areas
- management of pastures and meadows
- multifunctional and sustainable development of rural areas at different levels and preservation and proper utilization of regional values such as biodiversity, landscape mosaic, protection of water, soil and air
- development of technical and natural infrastructure for water supply and sewage management in rural areas

(Homepage of Institute Land Reclamation and Grassland Farming, 2007)

2. INSTITUTE OF SOIL SCIENCE AND CULTIVATION

The Institute of Soil Science and Plant Cultivation is the largest and the oldest research-development centre in Poland, conducting agricultural activities under supervision of the Ministry of Agriculture and Rural development. A wide range of activities comprises crop production, soil science and fertilization as well as recognition and protection of agriculture areas against various forms of degradation. The institute contributes to farm productivity and efficiency as well as to the high quality of agricultural products by providing farmers with agro-technical recommendations and crop management technologies for cereals, legumes, tobacco and hops. They consider not only the intensity level but also the economic situation of the farm.

Another important matter, that Institutes deal with is the development of comprehensive database on soil, agro-climate and plant cover in Poland. Data concerning soil includes geomorphologic properties, agrochemical status, degrees of susceptibility to degradation, especially erosion, degrees of contamination with

heavy metals, sulphur and some other scale numerical maps that cover various areas and may be found useful to manage agricultural space.

(Homepage of Institute of Soil Science and Cultivation, 2007)

3. INSTITUTE OF AGRICULTURE AND FOOD ECONOMICS

Institute of Agricultural and Food Economics - National Research Institute is a leader research centre in Poland in the field of economic science. The Institute is an independent scientific research centre supervised by the Minister of Agriculture and Rural Development.

The scientific and research work is focused mainly on the economy, production and social situation of rural areas in Poland, agriculture and broadly conceived food economy. Analytical studies and forecasts of the Institute provide information about possible changes in the development of food economy and the supply-demand shifts on the agricultural and food products markets.

The institute evaluates also the effects of Poland's membership of the European Union, the position of Polish agriculture on the single European market, the utilization of structural funds, the assessment of competitiveness of agricultural and food products on foreign markets, the economics of farm holdings and of the food processing industry, the effects of ownership and structural transformations, regional aspects of the food economy, as well as social and demographic changes in rural areas. The Institute collaborates with numerous Polish and foreign academic centres, with central and local administration bodies, as well as representatives of business and social stakeholders.

(Homepage of Institute of Agricultural and Food Economic, 2007)

Institutes of Polish Academy of Science

4. INSTITUTE OF RURAL AND AGRICULTURAL DEVELOPMENT

The Institute of Rural and Agricultural Development represents the Social Sciences Department of the Polish Academy of Sciences. It studies rural areas in Poland using inter-disciplinary approach. From the very beginning, agriculture comprised just a part of the much broader range of problems studied at the Institute embracing socio-economic development of rural areas. For this reason, the specialists representing many different disciplines: economics, sociology, demography, ethnology, education, spatial geography, etc. are working together in the institute. For a last couple of years, the institute has been observing current processes in rural areas from economic and social perspective and has tried to define possibilities of long-

term development of rural areas and of transformation agriculture to meet European requirements.

“The scientific community affiliated with the Institute is convinced that the rural milieu and agricultural should be seen as an environment in which a considerable part of the Polish society lives and works, must be economically diversified and must be equipped with economic, institutional and other structures enabling inhabitants to satisfy their diverse aspirations at a level similar to that available in urban settings,” say representatives of the institutes. The Institute has been contributing to the development of the framework for rural policy which one of the components is agricultural policy. Multi-functional development of rural areas is one of the priori studies in this institute.

The institutes deal with the issues:

- mechanisms and dilemmas of rural and agricultural development in order to formulate future development of rural areas
- cultural, social and economic aspects of the process of adjustment to the European Union policy;
- spatial differences in cultural, social and economic characteristics of rural areas - the unification versus regionalisation dilemma;

The Institute conducts a number of detailed studies in the spheres of rural education, infrastructure, unemployment, rural institutions, labour resources, less favoured rural areas, rural tourism, rural small business, transformation of former state farms, local leaders, etc.

(Homepage of Institute of Rural and Agriculture Development, 2007)