Abstract. The study conducted in Morocco, within FAO/ROA project, showed that agriculture, while being affected by exogenous natural conditions and macroeconomic factors, contributes significantly to environmental amenities, poverty alleviation, social viability and national culture. The analysis of environmental roles showed an asymmetry of information in favor of negative externalities. However, agriculture provides positive externalities as demonstrated through the economic evaluation of three cases concerning landscape beautification, agro-tourism and animal biodiversity conservation. Poverty has been exacerbated in depth, volume and severity and remains a rural phenomenon with a visible concentration in areas characterized by limited land endowments, low productivity activities and weak levels of economic development. Tough referred to as a national sovereignty attribute, food security has clearly deteriorated, during the 1994-2000 period, as evidenced by staple food availability, access and stability. Despite this evolution, agriculture still contributes to social viability in terms of spatial distribution of the population, the regulation of migratory flows as well as in terms of the preservation of community solidarity and the formation of social capital. Focus group interviews showed, in particular, that agriculture and rurality are closely related and that both have been subject to transformations which have affected people perceptions of agriculture contributions to society. The analysis, also, revealed the existence of linkages among externalities associated with the different roles of agriculture. Existing synergies or conflicts are crucial to the level of agriculture performance. This complex implies adoption of a holistic approach in designing integrate policy alternative. The latter should combine agricultural and non-agricultural sector policies and macroeconomic policies. Therefore, implementation of new options, in the absence of adequate and functional institutions, requires government intervention in order to prevent increasing uncontrolled market liberalization that may be detrimental to the stability the whole national country.

Introduction

Morocco’s case study of FAO/ROA’s project on “Socio-economic analysis and policy implications of the roles of agriculture” consists of six modules: review of recent policy, environmental externalities, poverty alleviation, social viability, culture and perceptions. The buffer role was not retained. In addition to the general investigations at the national level, the study dealt at the local level with the analysis of environmental externalities and their relations with the other roles played by agriculture in the case of dryland mixed farming systems.

Morocco covers 725,000 Km$^2$ of which only 12% are arable. The climate, of the Mediterranean type, is characterized by a strong aridity over the major part of Morocco. In 2000, the population is estimated at 28.7 millions people with 55.2% living in urban areas. The economy is relatively diversified; but agriculture remains a key sector with about 50% of the active population, 80% of rural employment and a contribution to the total PIB varying between 13% and 20% of which half comes from rainfed agriculture. About 86% of Morocco’s agricultural land (a total of about 9 millions hectares) is located in rainfed areas. There are 1.5 millions farm-households of which 70% operate farms of less than five hectares. On average, cereals cover about 68% of total agricultural area, 12.7% are left fallow, 8.8% devoted to fruit trees, and 10.5% devoted to other crops. The essential of Morocco’s agriculture is practiced under highly erratic rainfed conditions. Precipitations are generally insufficient and erratically distributed in time and space.

In addition to successive droughts, the economic context of the decade of the 90’s was characterized with a significant slowing down of the economic growth, the stagnation of income, and a decrease of private consumption (-1.4% par an). However, this slowing down was alleviated by the decrease of the general
index growth rate which passed from 1.2% per year for the 1993-1996 period to 0.9% per year for the 1997-1998 period (compared with 1.9% per year for the 1981-1985 period). But the trend did not prevent the slowdown of creating jobs and the increase in unemployment in urban areas (+2.2% to 2.9%) and underemployment in rural areas which reached rates varying between 18% and 33% in 1998-99.

Agricultural Policy Reform

The evolution of economic policy during 1990-2000 period was marked by the strengthening of the process of structural adjustment and liberalization which was more rapid than the accompanying institutional reforms necessary for the transition. The hasty disengagement of the state was translated by the reduction of public investments in general and the agricultural sector in particular. This trend was relieved since 1995 through programs aiming at improvement of social indicators in rural areas. Globally, the significant liberalization of country’s economy has led to the reduction of implicit taxation of agriculture, but only lightly reduced the protection of import substituted crops and taxation of export crops. These main trends of the policy evolution served as a background to the production of agriculture’s different externalities during the 1900-2000 period.

The Impacts of Agriculture on Environment

The study on the environmental roles of Moroccan agriculture has shown an asymmetry of information in favor of negative externalities (territorial, technological, and financial) which become more and more preponderant in the effects associated with the increase of agricultural production through intensive mechanization, chemical inputs, irrigation, and a high overcharge of the productive base. In this regard, it was shown that environmental externalities are essentially the result of the interaction between the farming system and the physical environment. But they are also conditioned by political, socio-economic, and cultural factors. In this sense, the demographic pressure is not always a forerunner for the degradation of the natural environment. For, an intensive and organized human presence is sometimes necessary for the preservation of natural patrimony and for shaping the space.

The management of the environmental roles of agriculture has suffered in the past from the lack of a coherent policy and from the lack of regulations. It is only recently, that initiatives have been undertaken towards a systematic and organic integration of environmental concerns in agricultural policy. Despite this situation, agriculture continues producing positive externalities. This is demonstrated through the economic evaluation of three situations: the contribution of agriculture in the maintenance and the shaping of the landscape in the mountain areas of Occidental High Atlas, the scenery externalities of agricultural origin in the Chaouia region (semi-arid plain); and the social value attributed by urban households to the preservation of the local sheep breed Sardi. The results of these evaluations at the local level show that agriculture engenders multiple positive environmental externalities. The latter have highly significant values attributed to them by the Moroccan society as well as foreign tourists which justifies the elaboration of a specific policy allowing the sustainable valorization of agriculture.

Agriculture and Poverty in Morocco

In a country like Morocco, poverty reduction constitutes a prerequisite to human development and to the elimination of food insecurity. The slowing down of agricultural production during the 1990-2000 period has clearly reduced its achievement in terms of poverty reduction. In fact, poverty has been exacerbated in depth, volume and severity although it has not reached levels attained in 1984/85. However, poverty remains a rural phenomenon (66% of the total poor) with a visible concentration in areas characterized by limited land endowments and weak levels of development. This progress was due to the real weakening of the level of the average of household livelihood and high inequalities in household consumption expenditures. Thus, risks of poverty are higher in most vulnerable households in least developed regions and individuals with low productive precarious activities in urban as well rural areas. The analysis of the progress of poverty has shown that poverty is essentially due to the slowing down of economic growth and
that favorable policy to rural and agricultural development would have contributed to its alleviation in the medium term.

In Morocco, the issue of food security is presented in the form of a shortage of the demand for food and the important insufficiency of the internal food supply. Also, the consolidation of agriculture’s food function is considered a national sovereignty exercise. During the 1994-2000 period, the different indicators used at both national and household levels indicated that food insecurity has considerably increased in all its components: availability, access and stability. The analysis has shown that in the short term and in the absence of immediate more efficient alternatives to improve the advantages linked with food security, it is necessary to associate subsidies targeted to consumption and production with keeping sufficient custom protection of cereals. And this is because of their important contribution in the composition of the food basket of the average Moroccan person and in the value of imports and the importance of population directly concerned with cereal production. The option of strengthening the country’s capacity of self supply can be negative in terms of productivity and stability through the extension of cereal crops into marginal zones with weak potential for production and difficult access.

**Discussions and Conclusions**

Despite the evolution of the agricultural sector, it still shows the capacity to continue which has contributed to social viability of Moroccan society. This contribution can be seized in terms of the spatial distribution of population, the regulation of migratory flows as well as in terms of the preservation of community solidarity and the constitution of social capital.

The analysis has shown that in spite of its importance in the recent history of the country, the main role of agriculture in the spatial distribution of population is reaching its limits. But agricultural employment continues to participate actively to the regulation of migratory flows and the generation of vital transferred income for the economy of migration areas. In their survival, these areas have made proof of agility through the existence of adaptation to change mechanisms and the persistence of informal but effective community organization and the liveliness of a culture that values solidarity. These manifestations of social viability are affected negatively and positively by policies of agricultural development, management of territory and natural resource management.

The study of the perceptions of the roles of agriculture has shown the relations between culture and the different roles of culture (social, economic, environmental, cognitive and identity) as established by individuals representing urban as well as rural elite. Collected answers revealed that agriculture and rurality are closely related and that both have been subject to transformations which have affected the perceptions developed on the different roles of agriculture. Some perceptions are very clear and do not suffer from any doubt such as the case for instance of agriculture shaping the landscape, the symbolic value associated with some special agricultural products such as wheat, olives and sheep. In other perceptions, the roles of agriculture are not well understood (conservation of biodiversity) or are subject to debate and controversy (protection of the environment, food security and poverty reduction, social viability). The diversity of perceptions translates indicates the dynamic character and the diversity of Moroccan agriculture as well as the presence of an information referential on the roles of agriculture. Collected perceptions did not show any significant differences between urban and rural elites, probably because of the similarity in the referential used by the two groups.

The analysis of the different roles of agriculture revealed repeatedly the existence of links between the externalities associated with these roles. The effects of the strengthening of the role of environment over the other roles varied according to whether the externalities are considered positive or negative. It was shown that the valuing of the landscape and the conservation of the local breed of sheep *sardi* were totally compatible with the strengthening of the roles of agriculture in terms of poverty reduction and food security as well as offering the opportunity for the rehabilitation of institutional organizations and local know how and the vivification of rural culture.

The poverty reduction and food security roles are not dissociable. They are mutually conditioned and their externalities are translated by similar effects on the other roles of agriculture. In fact, poverty reduction
through the increase of one’s own resources and income has a benefic impact on people’s food security and on social stability. However, the persistent search to reduce poverty and achieve food security through the increase of production can be harmful to the natural resources and exacerbate poverty and food insecurity in the medium and long terms. The strengthening of the different manifestations of social viability contributes to poverty reduction and food security through the renewed reproduction of collective life and solidarity practices against the adversity of natural and economic conditions. These aspects are found at unequal levels of clarity in the perceptions of the urban and rural elites regarding the roles of agriculture in Morocco.

The study of interactions and causal relations which exist between the different roles of agriculture calls for the adoption of a holistic global approach for the conception of political implications. It was frequently shown that strengthening one particular role through classical agricultural policy is translated by the apparition of negative complementarities with other roles. Besides, externalities associated with the roles of agriculture are not uniquely dependent on agricultural policy. They are also conditioned and even determined by macroeconomic and other non-agricultural sectoral policies.

The implementation of new options is faced with market and policy failures which are easily overcome. This is due to human, technical and institutional shortages inherited from years of State intervention on one hand and to the composite nature and unequally progressing economic development of the country. Paradoxically, this last feature requires the presence of public authority in order to prevent the sole market logics from being translated into drastic breaking detrimental to the stability of the country. In this regard, current policies combine custom protection, production and human development subsidies, subsidies to food consumption for the neediest. Nevertheless, well conceived policies will allow the progress towards optimal solutions that are favorable to producing external positive and sustainable effects and warranting the efficient internalization of agriculture’s externalities. Such a perspective, as shown in the case of environmental externalities often requires the simultaneous transformation of farming systems, mentalities, institutions and objectives of economic development.