Workshop 2.5: Adaptive management in subsistence agriculture

Convenor: **Christine Buchmann**

What action logics do family livestock farmers have to maintain their activity over the long term?

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Four contrasted cases study carried out by pluridisciplinary groups of scientists in France, Uruguay and Argentina, resulted in the explanation of adaptive paths taken by family livestock farmers to "last" over time. The common conceptual approach, that recognizes systems capacity to absorb internal and external disturbances, helps to compare the cases study and to build up a generic analysis framework. Thus, patterns are identified as basic elements of adaptive paths and farmers' action logics, independently of the context. The authors then discuss on how patterns (optimization, diversification, enlargement, autonomy, flexibility...) can improve knowledge on resilience assessment of family livestock systems.

How do livestock and crop sciences represent evolutions of farming systems? A review

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Farming systems have to face increasing uncertainty in their environment. We analyse evolutions of farming systems over the long term as a double co-evolution: co-evolution of the farming system and its environment, and of the farmer and his biotechnical system. Learning is usually cited as an interesting evolution process. Agronomists have modelled farmer activity through the model of action, and the model of behaviour for action: these models do not allow any important shift in the farming system over the long term. Representing dynamics of farming systems that last over the long term requires integrating learning with farmer activity.

Food insecurity and risk management of smallholder farming systems in Ethiopia

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Agriculture is the economic mainstay of Ethiopia. About 80% of the Ethiopian population depends on smallholder agriculture whilst about 6 million of people are food insecure due to limited availability and access to food. Food insecurity has complex interfaces with environment, climate, economy, health, gender etc. Through the study of farming systems and livelihoods in two Ethiopian food insecure areas, a suited methodology is presented how to incorporate livelihoods into vulnerability and how to match economic and social dimensions with environmental and spatial analysis. The results show that natural, market, and health shocks constitute a major challenge to rural economy.

Risk management of vulnerable rural households in Southeast Asia

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Access to formal insurance services is scarce in developing countries. Based on empirical evidence, major risks and risk management strategies of ethnic minority farm households in mountainous Northern Vietnam are presented and analysed. The paper investigates the theoretical links between poverty, vulnerability and risk. The concept of vulnerability to poverty lays the analytical framework. Results suggest that limited endowment with and access to capital assets and service institutions, as well as human and economic risks are the main components affecting rural livelihoods. Constrained access to adequate risk management strategies increase household's vulnerability, drowning them more and more in poverty.

Protected areas, subsistence farming systems and nature conservation

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"Serra de Montemuro" is one of the 60 sites in Portugal's Nature Network Sites national list. Local agriculture and animal production are clearly declining and many traditional activities are at risk of abandonment. This tends to be critical for nature conservation, particularly for maintenance of biodiversity and preservation of typical mountain landscapes. The paper will show that in mountain areas, particularly those classified as Nature Network Sites, farming, economic development and nature conservation cannot be seen as antagonistic objectives. The development of traditional subsistence agriculture, agro-forestry and food processing activities is essential for the preservation of Montemuro Site's natural values.