

# **The evolution of institutions for non-wood forest products: an empirical study of harvesting practices across Europe**

## **Topic 2: Natural resources, ecosystem services and environmental quality**

### **Subtopic 2.1: Natural resources: management, use and conservation**

#### **Short-summary**

We study the factors explaining the co-evolutionary dynamics between individual harvesting behaviour and institutional development, following the model proposed by Brooks (2010). We test this model on a series of case studies across Europe addressing the harvesting of wild non-wood forest products.

We find that apart from the factors identified by Brooks, such as, the perception of resource scarcity, attitudes and values of resource users, social capital, and economic factors, other factors play a role as triggers of co-evolutionary dynamics, such as rural communities' threshold for acceptance of external harvesters, externally-driven learning processes, higher-scale decision-making and income-generating strategies. We extend Brooks' model by incorporating these additional factors and discuss its applicability to a wider range of instances of institutional development.

#### **Extended abstract**

Wild non-wood forest products (NWFPs), such as mushrooms, berries, aromatic, medicinal and decorative plants, fruits and nuts have always constituted an important part of the total economic value of forests. A recent study by Schulp et al. (2014) estimates that at least 65 million EU citizens collect wild edible NWFPs, and over 100 million consume it. But edible NWFPs represent only a small fraction of the whole range of NWFPs that is growing in the European forests.

Recent years have seen an increase in the foraging for wild NWFPs both for self-consumption and for commercial purposes, bring about concerns about the sustainability of the resources. Most locally consumed and traded NWFP are de facto governed by customary laws related to land tenure and resource rights. However, in practice the enforcement of these rights is at best weak, which opens scope for different local institutional arrangements, of a variable degree of formality, governing the access to and harvesting of NWFPs.

What drives the evolution of these local institutions, and why do they take different forms (access restrictions, harvesting practices, etc) and modality (formal/informal) in different regions? What role do individual behaviours play in this process? Brooks (2010) develops a co-evolutionary dynamics model between

community resource management institutions and individual conservation behaviours. According to this model, the preferences and behaviours of individuals affect the size of sub-groups of resource users and thus shape the evolution of institutional rules, namely their presence or absence and/or the type of rules in use and the degree of their formalization. The institutions, in turn, influence the behaviour of individual resource users, the patterns of resource use and thus the sustainability of the resource itself. The author identifies 4 groups of factors triggering the co-evolution of institutions and behaviours, namely: (1) knowledge/perception of resource scarcity; (2) attitudes and values of resource users; (3) social capital, and (4) economic factors (such as, dependence on the resource). Of these, resource scarcity was the only one significantly associated with the voluntary conservationist behaviour in his case study.

We take this model as a starting point to explore the evolution of institutions governing the access to and harvesting patterns of wild non-wood forest products in Europe. Our selected case studies cover diverse NWFPs (berries, mushrooms and moss) from different European regions (Val di Fiemme - Italy, Tabuyo del Monte - Spain, Poblet - Spain, North Karelia - Finland, Šumadija and Western Serbia - Serbia, Styria - Austria, East Scotland and Wales - U.K.). In all these regions, we witness the evolution of different types of formal and informal institutions governing NWFPs at local scale, coupled with the changing behaviours of resource users. Our objective is to explore the factors driving the institutional development in these regions, and alongside with it, test the validity of Brooks' model.

Material for the study has been collected by means of 73 in-depth semi-structured interviews, conducted in the case study regions during the spring-autumn 2014. For the sake of the analysis, the interviews were transcribed and coded.

In our study, we do indeed identify the co-evolutionary dynamics between institutional emergence and resource users' behaviours, as suggested by Brooks (2010). In Šumadija and Western Serbia, as well as in Styria, for example, national mushroom picking regulations are only loosely enacted, there is no perception of resource scarcity and no demands for new institutions were identified. In Wales (UK), we witness the emergence of moss pickers who voluntarily adopt certain moss picking practices that are believed to improve the sustainability of the resource. In Tabuyo del Monte (Central Spain), on the other hand, the evolution of local knowledge concerning mushroom picking practices partially triggered by market links and the increasing perception of resource scarcity, led to the emergence of informal institutions governing access and self-controlled mushroom harvest. In Poblet area in Catalonia (North East Spain), the increasing pressure on the resource, along with the gradual shift in social opinions towards rights and duties of mushroom pickers, led to the introduction of pilot scheme of mushroom harvesting permit. And in North Karelia (Finland), more or less formal obligations were introduced to tackle the disputes between the traditional local pickers and

the foreign newcomers who were not aware of the traditional informal wild berry harvesting norms.

In all these cases, the triggers identified by Brooks – ecological scarcity perception, attitudes of resource users, the degree of dependence on resources, and social capital and networks acting as the propagation channels of institutional rules – play a more or less pronounced role.

However, our study permits us to uncover additional factors affecting the evolution of institutions governing access and harvesting of NWFP. We found evidences that other triggering factors include the presence of some type of social threshold, understood as the capacity of rural communities to absorb and accept external harvesters (Poblet, North Karelia, Val di Fiemme). We also observe the relevance of externally-lead learning process on good harvesting practices (Tabuyo del Monte, North Karelia); as well as the role and the degree of acceptance and adoption of upper level institutions (that is, those developed and introduced from outside the region) by the local communities (Val di Fiemme, Tabuyo del Monte, Serbia).

Moreover we observe that disturbances external to the local community are likely to reshape the traditional picking norms: a wildfire in a nearby municipality may provoke a migration of pickers towards neighbouring harvesting areas (Tabuyo del Monte), or a change in the immigration legislation may exert a call effect to foreign pickers unfamiliar with good picking practices (North Karelia). Such an external shock, if strong enough, may provoke an abrupt and rapid change in values and attitudes, and reshuffle the whole system of local institutions, resulting in a fast change in the type or degree of formalization of rules.

We also uncover that rural communities frequently have vested interests in transforming the NWFP resource in their areas into cash-flow towards their communities and/or their members. New institutions frequently do not only address the harvesting practices or lay new access rules to the resource, but also include an economic component in view of generating income. In this regard, some institutional arrangements introduce a fee for the right to harvest NWFPs, while other address this issue indirectly by favouring those agents who already generate income from NWFPs in the area. In Val di Fiemme the revenues from mushroom picker tourists are reinvested in municipal affairs, while in Poblet the funds are used for forest management. Value chain creation and rural development justifications underlie the diverse variety of rules applicable to harvesters: everyman's right in North Karelia, free harvest rights aligned with the local mushroom cooperative interests in Tabuyo del Monte, and the absence of formal control over commercial moss pickers in Wales, for example.

All in all, our study permits us to identify additional factors at play in the co-evolution of local institutions and individual behaviours, and contributes to the

empirical research on the emergence and evolution of institutions for natural resource management and the roles of actors in it.

References:

Brooks, J.S. (2010): The Buddha mushroom: Conservation behaviour and the development of institutions in Bhutan. *Ecological Economics* 69, pp. 779-795.

Schulp, C.J.E., Thuiller, W., Verburg, P.H. (2014): Wild food in Europe: A synthesis of knowledge and data of terrestrial wild food as an ecosystem service. *Ecological Economics* 105, 292-305.