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Non-Timber Forest Products and Human Health in the Context of Environmental Change

This paper discusses the nexus between non-timber forest products (NTFPs) and human health in the context of environmental change. Over the years, NTFPs have been noted to have a great potential role in improving nutrition and health, and for reducing poverty. More recently, there is increasing concern about the disappearance of several NTFPs as a result of unsustainable utilisation of these products and also because of environmental change. We highlight some of the key challenges to sustainable utilisation of NTFPs, and argue that such challenges are largely a result of the poor conceptualisation and operationalisation of NTFP projects. The role played by dysfunctional policies related to NTFPs, especially in developing countries, are discussed.

KEY WORDS: *non-timber forest products, human health, policy*

Introduction

Specific targets under the UN millennium development goals (MDGs) have clearly established links between poverty alleviation, human health and environmental issues. Poverty alleviation especially in developing countries is linked to the utilisation of forest products including non-timber forest products (Hulme & Shepherd, 2003; Sunderlin *et al.*, 2008). In most developing countries where forest products are utilised, the most widely-consumed food products include: bushmeat, mushrooms, snails, leaves-food, honey, and fruits (Shackelton *et al.*, 2002, Marshall *et al.*, 2006, Belcher and Schreckenber, 2007). There is a great potential role for non-timber forest products (NTFPs) in improving nutrition and health, and for reducing poverty especially during the lean season.

Furthermore, forest environments are also used to provide therapeutic benefits with respect to acute emotions especially for those experiencing chronic stress. For example, Shinrin-yoku involves walking in the forest to reduce psychosocial distress (Morita *et al.*, 2007). Existing literature from various disciplines provides evidence on how human health and forests are related (Voeks and Sercombe, 2000; Belcher, 2003; Tillman, 1997). For example, a survey in Ghana indicated 90% of the sampled population used plant medicine for e.g., malaria, arthritis, and snake-bite (Ahenkan & Boon, 2011). This finding resonates with the situation within the broader West African context, particularly in countries such as Cameroon, Nigeria, and Liberia (IUCN, 2008).

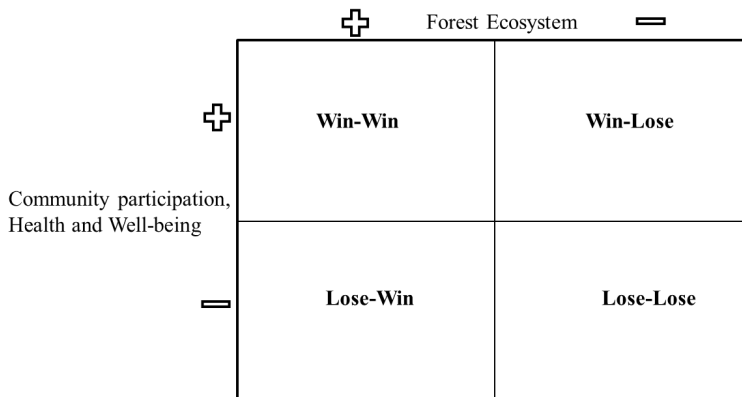
Despite the recognition of the importance of NTFPs, there is a growing concern about the disappearance of some NTFPs, and this may be resulting in increasing poverty for fringe forest communities across the globe (Sunderlin *et al.*, 2005; Bird & Shepherd, 2003; Hulme & Shepherd, 2003; McKay & Lawson, 2003). Consequently, a sustainable system for harvesting NTFPs is imperative. Such a system is conceptualised as one in

which NTFPs can be utilised indefinitely from specific forest locations with minimal negative impacts on the structure and dynamics of the ecosystem from which the forest products are being exploited (Anyinam, 1995; Schreckenberg, 2004).

This paper discusses the potential of NTFPs to contribute to sustained human health and poverty alleviation in the context of global environmental change. The paper highlights some of the challenges to sustainable utilisation of NTFPs, and argues that such challenges are usually as a result of the poor conceptualisation and operationalisation of NTFP projects. Four potential outcomes of NTFP projects as suggested by Sunderlin *et al.* (2005), and the overall role of dysfunctional policies related to NTFPs and human health nexus in developing countries are discussed.

Conceptualising sustainable NTFPs projects

The growing need for utilisation of NTFPs has stimulated a wide range of projects to acquire the benefits that NTFPs have to offer to developing countries (Antypas *et al.*, 2002). The outcome of such projects are mixed and essentially depend on how such projects were conceptualised from onset. Cater (1994) and Sunderlin *et al.* (2005) have identified four possible outcomes that can originate from the implementation of NTFPs projects depending on the prevailing market dynamics, policy framework and socio-cultural factors. These outcomes are ‘win-win’, ‘win-lose’, ‘lose-win’, and ‘lose-lose’ (Figure 1). We elaborate on each of these outcomes below, and emphasize that sustainable NTFPs projects can only achieve the ‘win-win’ state when community and stakeholder participation is central to project development and management.



Modified from: Sunderlin *et al.*, 2005

Figure 1: Conceptualising Sustainable NTFPs Project Outcomes

Win-win

This is the situation where the positive links between environment and development result in environmental improvement at the same time as the promotion of income growth. In the field of NTFPs, such situations arise where sound environmental and business practice coincide. This essentially refers to the ideal situation in which benefits accrue to all stakeholders and the forest. There is relative scarcity of such outcomes in developing and gradually in some developed countries as well. A few exceptions however, include: e.g., regrowth of trees in pastoral systems in Tanzania, Kenya and Burkina Faso.

In Ghana, for instance, a project focusing on the extraction of oil from the seed of *Allanblackia* was developed in 2002 as an innovative agri-business which also included several African countries such as Cameroon, DRC, Ghana, Liberia, Nigeria and Tanzania. The key aims of this *Allanblackia* business were to improve the economic status of rural poor in over 500 communities through cultivation and sustainable harvesting of the *Allanblackia* and to improve diets by the provision of high quality food oil (International Union for Conservation of Nature (IUCN), 2008). The oil from the *Allanblackia* seed is also used to manufacture products like margarine, soap and cosmetic products. A unique public-private partnership was formed to manage this process including local communities, research institutes (Forestry Institute of Ghana and International Centre for Research in Agroforestry), non-governmental organisations (e.g. Friends of the Nation), donor agencies (SNV, IUCN) and a private company (Unilever Ghana Ltd.). The views expressed by participants in the project puts it in the 'win-win' category. Some of the reasons for this include: the participation of local people in partner communities of the project; improved quality of seed processing drying and packaging and the acceptance of the price of *Allanblackia* by all stakeholders (IUCN, 2008). While acknowledging that this project may be a 'win-win' for the local communities, we will also point out that at any point in time project related factors and unforeseen events can result in a shift from the current 'win-win' situation to any of three remaining scenarios.

For instance, new partner communities are concerned about low prices and a poor payment structure for their seeds. There are also challenges with communication down to the local level and this is reinforced by weak links with community focal persons. Another challenge that could derail the 'win-win' effect of this project is the lack of sufficient attention to gender issues (IUCN, 2008). Furthermore, there are already concerns that the volume of seeds gathered yearly may be decreasing. Similar to all NTFPs projects, unless harvesting is controlled, the species will be depleted much more rapidly than can be replenished. Also the magnitude and frequency of forest fires remains a major challenge to the sustainability of NTFPs especially in developing countries, this is further reinforced by the lack of long-term forest monitoring in most poor countries.

Win-lose

‘Win–lose’ outcomes are characterized by low joint profit. This is represented by the situation where the environment benefits, but where other interests (communities) may lose out. This situation can happen when communities have been forcibly excluded from NTFPs they depend on, for conservation purposes, leading to deterioration of well-being.

Lose-win

Sunderlin *et al.* (2005) align the ‘lose-win’ category with the history of agricultural and rural development. The expansion of agricultural lands over time has often been at the expense of natural forest cover and biodiversity. In case of NTFPs, any case of over harvesting of forest products will result in environmental degradation in the interests of short-term profit maximization. The loss side of the equation applies not only to the environment in this case, but also to the local economy and culture.

Lose-lose

This is where, resulting from the loss of the very forest product which attracted revenue in the first place, all interests are compromised. Indeed, without proper management, each of the previous scenarios can potentially end up with a ‘lose-lose’ situation. In this category, the outcomes are frequently described as “the downward spiral of poverty and environmental degradation,” the “vicious circle,” or as “desperate ecocide” (Sunderlin *et al.* 2005, p. 1356). Under these circumstances, there can be a causal, reciprocal relationship between worsening social and environmental conditions. A common formulation of ‘lose–lose’ involves outsiders exploiting and eliminating local forest resources, leading to a decline livelihood of the local people.

Taken together, in conceptualising sustainable NTFPs projects, the level of community participation or stakeholder involvement, and time order of events have to always be important considerations. This is because what begins as a ‘win–win’ or ‘win–lose’ project, can quickly turn out to be ‘lose–lose’ project because of a number of factors including lack of community involvement, and a lack of focus on the sequencing of events. These together may result in a loss of the resource base.

The effects of dysfunctional policies in forest and human health nexus

Although it is obvious theoretically that ‘win-win’ outcomes are the most desirable, seldom are such outcomes achieved because of dysfunctional policies especially in the context of developing countries (Wynberg and Laird 2007; Schreckenberg 2004). The dysfunctional nature of policies targeted at forest products is a perennial issue associated with resource use and management around the world. Despite the wide variations in cultural, economic and political conditions, experiences or lack thereof with NTFP policies are remarkably similar from place to place, and are characterized by common regulatory features and inherent failures. Invariably, NTFPs have been both overlooked and poorly regulated by governments. For instance, in some cases multiple government departments are directly or indirectly responsible for forest products management. In such situations, policies tend to be inconsistent, duplicated and sometimes confusing even for those who are supposed to implement these policies (Antypas *et al.* 2002). For example, the Forest Commission of Ghana is sometimes unaware of encroachment of mining activities into forest reserves (Taabazuing *et al.* in press). In some cases policies may be opportunistic or drafted in response to perceived threats, and rarely do these policies involve consultations with stakeholders or careful analysis of the complex factors involved in the sustainability and equity of NTFP management, use and trade.

Conclusion

Poor populations often have no option but to choose immediate economic benefits at the expense of the long-term sustainability of their livelihoods. Consequently, the concept of intra-generational equity is also central to sustainable utilisation of NTFPs, but anomalies are evident when the spatial occurrence of the relative gains and losses are examined (Cater 1994). This is most evident where, as a result of the international organisation of NTFP market, profits and managerial earnings are repatriated to NTFP company headquarters located in the more developed countries. Simultaneously, there is a net reduction of NTFP earnings at the destination, exacerbated by import leakages resultant from the need to import the requisites necessary to support NTFP profits.

In moving towards ‘win-win’ outcomes, negotiation (trade-offs) with a focus on local participation is imperative. Several steps may be taken by stakeholders in the negotiation process to achieve this. These include: separating the people from the problem; focusing on interests, not positions; inventing options for mutual gain; insisting on using objective criteria (consensus) (IUCN, 2008). These guidelines are necessary but not sufficient in themselves to generate win-win outcomes given variations across time, culture, context, and geographic regions.

Future action and research is required to address the aforementioned challenges. In so doing, questions that may be asked include: how do we improve the livelihoods of

the people living on forest fringes? How can we develop innovative approaches to forest ecosystem restoration and management? How can we ensure that NTFP trade, while benefiting peoples' livelihoods, does not increase spatial inequalities between households and communities or between the corporate and local? In line with Burger (1990), can health be used as a surrogate of the forests? How can we continue to bring forest and health issues to the radar of policy-makers? Who are the stakeholders and at what point do we engage them? How can we align the frequently different government departments involved directly or indirectly on forest management issues?

More work is needed to reconcile whether NTFP trade can improve development and conservation of natural forest in some contexts. Aggregation, comparison, and contrast of case studies can serve to identify broad patterns, reveal best practices which in turn can be used to inform the policy process. The work requires interdisciplinary collaboration of researchers from various disciplines, yet for various reasons, we continue to be subsumed by our individual expertise and making disciplinary claims.

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