**PROJECT PURPOSE**

Examine non-timber forest product (NTFP) commercialization in Mexico & Bolivia, identify factors influencing success, & agree multiple definitions of success.

The decision-support tool (DST) was developed from data collected on 10 NTFPs, in 11 communities, during an interdisciplinary research project using socio-economic surveys at community and household level and quantitative and qualitative analysis of value chains. The contribution of NTFPs to poverty reduction, gender equality, sustainable resource use and equitable access to natural resources, along with the structure and function of 16 different NTFP value chains, was analysed to enable identification of attributes which make a chain successful. Despite a continued interest in NTFP commercialization in rural development, there is a need for information and tools to support decisions taken on NTFP selection, the relative success of different products, and how and where investments should be targeted. Such decisions are taken by:
- Local communities considering investing in the establishment of a commercial enterprise;
- Government and NGO development and conservation agencies;
- Private sector institutions involved in trading / marketing forest products.

**METHODS**

66 factors, critical to overall commercialization success, were identified from community & market research. Simple factor scoring enabled probabilities of success to be predicted, on the basis of a Bayesian Belief Network the project developed.

Why this approach? Making predictions requires a modelling approach that enables:
- Integration of quantitative and qualitative information;
- Prediction of specific outcomes from generalised information;
- An appropriate type of output for supporting decision-making (e.g. risk analysis).

Why a BBN powered decision support tool?
- Variables represented as probabilities and therefore enables uncertainty analysis;
- A common framework is provided for integrating different data types; useful for analysing evidence from different sources, e.g. case studies;
- BBNS can learn probabilities and model structure from data.

**INTRODUCING DATA:**

The model is based on consideration of five types of capital asset required to support rural livelihoods: Human, Social, Environmental, Physical and Financial assets. The potential impact of NTFP commercialization on livelihoods can be measured by the available assets before and after commercialization.

The project team scored the factors, presented as questions, for each case study, e.g. Factor: “Degree of horizontal integration” Question: Is there an organisation that links producers or processors to buyers?

The DST user interface prompts factor scoring by providing a small number of possible answers to specific questions;

- “Evidence of overharvesting”? [Yes / No]
- “Degree of community organisation”? [High / Low]
- “Magnitude of returns to labour”? [Low / Med / High]

Where answers are unknown, the value is inferred from the combined case study data. Where answers are uncertain, a likelihood (on a sliding scale of 0-100% probability of being correct) can be entered in association with a particular response.

**EVALUATING POTENTIAL POLICY INTERVENTIONS ON LIVELIHOODS:**

The current situation is reflected in the left hand column for mushrooms, maguey/mescal and jipi japa palm (top, middle, bottom rows respectively), 3 different interventions are considered from left to right:

1. (2“column) provide credit for community level NTFP-based enterprises
2. (3“column) improve rural transport and communication infrastructure
3. (4“column) promote better management of the communal natural resource

Potential intervention effects can be visualized by considering the availability of the 5 capital assets: Natural, Physical, Social, Human and Financial, represented as spokes on the pentagon. These spoke values represent the availability of individual assets as inferred by the DST from data for the 3 case studies. The area within the pentagon represents the overall availability of the combined assets for engaging in successful NTFP commercialization.

Intervention 1 generally increased financial capital and had little effect on natural capital, with intervention 3 having a pronounced impact on availability of natural capital. In cases where specific assets are severely lacking, targeted policy interventions can have significant impacts, increasing the probability of commercialization success. In the 3 case studies the lack of natural capital assets is striking, and policy interventions aimed at improving management of natural resources will likely have a greater impact than other policy options shown.

**TESTING THE MODEL:**

The DST was compared with an independent data set which was obtained by asking our research partners to assess the impact of commercialization of their NTFP case studies against a suite of household & community-level indicators defined by CIFOR (Global NTFP study). The validation showed that the DST predicted the same kinds of impacts at community and household level, as those indicated by the set of CIFOR scores.

Lessons learnt:
- Successful NTFP commercialization, defined as increasing all 5 capital assets is difficult to achieve in practice;
- Positive impacts on 1 asset type, or at 1 scale, may need to be traded against negative impacts on another asset or at a different scale (e.g. financial capital at the expense of natural); NTFPs can help with “value judgement” decision making.

**THE DST: A METHODS MANUAL & OUR FINAL PUBLICA...**

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