Selected tools and methodologies applied within IUCN for understanding forest dependence
(Supplementary reference material only)

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As IUCN's work on forest dependence is being undertaken as part of programmatic efforts to support sustainable and locally-appropriate forest policy measures, it places a strong emphasis on responding to the information needs of national and local government policy-makers in the countries concerned. Thus the following list of methodologies relate not only to research but also to communication and engagement with policy-makers.

Qualitative method: the Forest-Poverty Toolkit
Based, in part, on participatory rural appraisal techniques, the Forest-Poverty Toolkit focusses systematically on forest and natural resource issues and uses a simple and rapid way of capturing qualitative and quantifiable information on non-cash as well as cash incomes. Its central tool analyses total annual household income, split by income source: agriculture, livestock, forests, other environmental income, employment, trading, etc. Cash and non-cash (subsistence) income from each of the first four are captured by gender and by wealth level. IUCN and its partners have applied the Forest Poverty Toolkit to investigate forest reliance over the last 15 years and in over 23 countries and 75 sites in different parts of the world. These analyses have demonstrated that forest dependency is much greater and more extensive than was previously thought. It is a significant feature in the lives of not only the poor but also of wealthier households, and not only in tropical forests in developing countries but also in northern temperate and boreal ecosystems in the developed world.

A Restoration Opportunities Assessment Methodology (ROAM)
ROAM is a flexible and cost-effective analytic process for identifying restoration opportunities at national or sub-national levels, as well as describing how those opportunities relate to food, water, and energy security. Application of ROAM generates good context specific knowledge relevant to understanding and addressing forest and land use planning and management. Particularly it helps to:

1) identify priority areas for restoration;
2) prioritise relevant and feasible restoration intervention types across the assessment area;
3) quantify costs and benefits of each intervention type;
4) analyse the finance and investment options for restoration in the assessment area;
5) estimate the values of additional carbon sequestered by these intervention types; and
6) come up with a diagnostic of 'restoration readiness' and strategies for addressing major policy and institutional bottlenecks.

Through the participatory processes, the assessment provides a framework for a common setting of restoration goals at a landscape level, hence able to address immediate priorities, including livelihoods, through restoration.

Restoration Ecosystem Service Tool Selector (RESTS)
Restoring degraded forests and agricultural lands has become a global conservation priority. A growing number of tools can quantify ecosystem service tradeoffs associated with forest restoration. This evolving "tools landscape" presents a dilemma: more tools are available, but selecting appropriate tools has become more challenging. IUCN has developed a Restoration Ecosystem Service Tool Selector (RESTS) framework that describes key characteristics of 13 ecosystem service assessment tools. Analysts enter information about their decision context, services to be analysed and desired outputs. Tools are filtered and presented based on five evaluative criteria: scalability, cost, time requirements, handling of uncertainty, and applicability to benefit-cost analysis. RESTS uses a spreadsheet interface, but a web-based interface is planned. Given the rapid evolution of ecosystem services science, RESTS provides an adaptable framework to guide forest restoration decision makers toward tools that can help quantify ecosystem services in support of restoration.

Forest restoration prioritization tool (ROOT)
IUCN and the Natural Capital Project have developed a tool that optimises the location of forest restoration activities to support increased ecosystem service benefits by minimising the costs of trade-offs between projected ecosystem services. It uses a robust optimisation algorithm to weigh and prioritise ecosystem service benefits and provides a series of maps that are easily understood and communicated to decision-makers.

The Land Degradation Surveillance Framework (LDSF)
IUCN is also collaborating with ICRAF to pilot test land degradation surveillance framework (LDSF) to carry out assessments of land health, using indicators such as fractional vegetation cover, soil erosion, root-depth restrictions, soil organic carbon (SOC) and infiltration capacity to show how these indicators can be used to identify degraded areas and to identify options for restoration such as selection of suitable tree species for restoration of degraded soils or erosion control.

Africa Tree Finder App
The Africa Tree Finder App enables users to find suitable tree species for a particular location. Currently the app can be used within the East Africa Countries of Uganda and Kenya, with other countries to be included soon. The app can be used by extension officers, foresters, ecologist and farmers to help identify suitable tree species for their surroundings. The app has simplified the task of identifying a tree species by giving the user option of selecting basic "major uses" like "Wood", "Human Consumption", "Environmental Use" and "Animal Consumption" after which they can get a listing of Species.

Household surveys
The household survey methodology developed for the 2014 study on forest dependence in Eastern Europe and Russia uses elements of the World Bank Living Standards Measurement Survey and the CIFOR Poverty Environment Network methodology. It systematically accounts for all household income (cash and non-cash) for the preceding 12-month period including income from forests, agriculture, livestock, wage labour, commercial business activities and any other sources.

The Forest Community Fingerprint (FCF)
The FCF is a novel approach to more accurately estimate the human-nature dependency structure in boreal and temperate forest ecosystems and to document drivers of sustainability and efficiency of interactions between communities and their surrounding forest ecosystem resources. The FCF concept utilises specific data gathered during targeted

household surveys as well as information derived via remote sensing techniques. The FCF concept has a flexible nature and can potentially be adjusted to measuring the overall levels of community poverty and forest productivity. Each parameter is calculated based on a set of weighed input variables, which can be adapted and changed to reflect the local conditions of the region of interest. Further, additional information can be used to complement the analysis and to provide an even more detailed assessment of the six FCF parameters (e.g. greenhouse gas emissions, gross domestic product).

Mobile phone map of Vegetation and Climate Change in East Africa (VECEA)
With a mobile phone-based application, VECEA is tool for collecting data on fallows for extension of forest landscape restoration information to farmers. IUCN worked with ICRAF to develop this innovative mobile phone application (running on Android software) to provide accessible and up-to-date information to farmers who could benefit from restoring their lands, but lack crucial information about how and where to do so.

The People in Nature knowledge basket (PiN)
The aim of the People in Nature knowledge basket is to promote the uptake of existing knowledge and generate new knowledge on the interrelationships between humans and nature, focussing on the use of biodiversity (genes, species and ecosystems) and its contribution to the lives of rural and remote communities. The focus of PiN assessments is on people's material use of biodiversity (food and nutrition, health and medicine, energy, shelter, income, ceremony and trade), recognising that use is embedded within worldviews that include deep-seated cultural norms, values and understandings. These assessments also consider symbolic interrelationships with nature expressed through cultural narratives, language, and traditions, including diverse understandings of sacred and spiritual aspects of nature and the relationship with natural resources.