

Women, forests and markets: researching poverty alleviation through commercialisation of forest resources in Mexico and Bolivia.

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Abstract:

It is widely recognised that substantial opportunities exist in Latin America to enhance livelihoods of marginalised forest dependant communities, through the commercialisation of forest resources. The research presented in this paper explores the relationship between successful commercialisation of Non Timber Forest Products (NTFPs), and poverty alleviation and gender equality, in Mexico and Bolivia. It documents the approach taken in designing and implementing a research project that would contribute to the increased understanding of different needs of both women and men involved in NTFP commercialisation. It acknowledges that for poverty reduction to be effective, the many varied and important roles of women, including their contribution to household income generation through the use and management of natural resources, need to be recognised. Gender discrimination is globally the most widespread form of social exclusion, and this inequality is a key obstacle to development. United Nations estimates indicate that up to 70% of the world's poor are female, and women in developing countries constitute the majority of the labour force, playing a key role in managing community resources and helping to protect the environment. This paper shares some of the challenges facing researchers wanting to mainstream gender issues in the natural resources sector, and some of the valuable lessons learnt from the field.

Introduction:

During the past decade, non-timber forest products (NTFPs) have been widely promoted as a potential solution to high rates of tropical deforestation. The commercial development of NTFPs, such as fruits, nuts, resins, fibre and medicines derived from plants, could increase the value of forest resources and thereby reduce the conversion of forest to other land uses. As a result, many development agencies and conservation organizations have fostered the commercial development of such products, with the aim of encouraging forest conservation while alleviating rural poverty. However, the result of such ventures has been highly variable. While some NTFPs have been commercialised successfully, many others have failed, raising questions about the joint contribution that NTFPs can make to rural development and conservation strategies. A key question has therefore emerged: which factors determine whether the commercialisation of an NTFP will be successful?

Non Timber Forest Products are an important tool in addressing poverty issues for marginalised, forest dependant communities, by contributing to livelihood outcomes, including food security, health and well being, and income (FAO, 1995; Falconer, 1996). In many parts of the world these resources are critical, especially for the rural poor and women, and may provide them with the only source of personal income (Falconer, 1996; Rodda, 1993). It is the socially most marginalised people who are the main actors in NTFP extraction (Ros-Tonen, 1999). NTFPs represent an important source of income and employment, particularly to women, encouraging increased production and harvesting for local trade (Marshall and Newton, 2000; Soehartono and Newton, 2000 a,b; Hellier *et al.*, 1999;

Konstant *et al.*, 1999). Despite this, the opportunities and constraints to successful commercialisation of NTFPs in Latin America (especially from indigenous populations), remains largely undervalued and understudied.

This paper draws predominantly on research currently underway in Mexico and Bolivia which focuses on the relationship between poverty, gender and successful commercialisation of NTFPs. The research is interested both in identifying the factors that contribute to successful commercialisation and in looking at the impact of (different types of) commercialisation on communities. It will provide an important understanding of factors (socio-economic, gender and cultural) which influence successful commercialisation through identifying how domestic markets function, and the type of information necessary to provide the basis for designing market interventions which could result in increasing benefits to rural poor producers, processors and traders. The research findings will be used to develop practical tools for evaluating the potential for commercialisation of NTFPs, both for use by local communities (in the form of a manual) and for use by other decision-makers (in the form of an Expert System). The selection of Mexico and Bolivia, which differ in social and cultural structures, will enable comparative analysis of the factors influencing NTFP commercialisation, thereby permitting implications for other countries in the region to be drawn.

Available evidence indicates that marketing processes and structures are one of the most significant constraints to successful development of NTFP activities as part of livelihood strategies (Tommich, 1998; Ruiz-Perez and Byron, 1999). In a recent background paper for DFID (2000), the lack of access to natural resources was identified as one of the two most important linkages between poverty and the environment. The main limitations to poverty reduction, from an environmental perspective, are identified as social, institutional and natural constraints to sustainable commercialisation of NTFPs (ODI *et al.*, 1999). Whilst most Latin American countries are middle income, there exists greater income inequality than in any other region of the world, with on average the poorest 30% of the population receiving 7.5% of the total income.

The design of this research recognises the tendency for women, in particular, to suffer from poverty, due to their low social status, low participation in decision-making processes, and their labour intensive workload. In order to achieve a gender focus in our work, we decided to study the relations between women and men, rather than focussing exclusively on one or the other. It was of paramount importance to implement research that would contribute to the increased understanding of different needs of both women and men involved in NTFP commercialisation, and the potentially different impacts that change in commercialisation may have on them, *vis a vis* their roles, responsibilities, needs and interests.

Gender inequality is a poverty issue:

Gender discrimination is globally the most widespread form of social exclusion, and this inequality is a key obstacle to development (DFID, 1999). Gender strongly determines vulnerability to poverty and women are more vulnerable to fall into, and remain entrapped within poverty, than men (Baden and Milward, 1995). This is largely due to the employment pattern of women, which results from the perception of women's primary function as being reproductive and domestic (Fontana *et al.*, 1998). Rural women have many varied roles and responsibilities, but much of their contribution to local economy is often undervalued and as such often results in invisibility of women workers in their own rights. In addition, rural women working in the informal sector, often do so with no social protection and are often denied access to credit. With these perceptions, it has been significantly harder for women to access resources, including education and land: "Women face unequal access to productive resources and services although they are largely dependent on self-employment for which land, capital, technology and labour are critical" (International Labour Office, 1995).

United Nations estimates indicate that up to 70% of the world's poor are female, and women in developing countries constitute the majority of the labour force, playing a key role in managing community resources and helping to protect the environment. Much of their work is unpaid and informal, and remains unacknowledged. Women are poorly represented in positions of power and their opportunities to represent themselves are severely limited. The Global Platform for Action, agreed at the 1995 World Conference on Women, Beijing, and other international development targets for the next century, strongly iterate the need for change in social, economic, and political relations between the sexes and for an end to gender discrimination. The UK Government's 1997 White Paper reflects this international stance, recognising that a commitment to gender equality is essential in addressing poverty elimination, based on principles of human rights and social justice: "Until men and women have equal access to the resources and services necessary to achieve their individual potential and fulfil their obligation to household, community and more broadly to society, poverty cannot be eliminated" (DFID, 1999).

It is already known that in much of Latin America, harvesting of NTFPs and management of the NTFP resource base is undertaken primarily by women, who face a specific set of opportunities and constraints in relation to the commercialisation of NTFPs. Information on women's role in forestry in Mexico and Bolivia is very sparse (Arizipe, Paz and Velasquez, 1993), and it is recognised that in areas with long term habitation, women have a strong working knowledge of forest products and are the main transmitters of this knowledge to other generations (World Bank, 1995). However, women suffer from lack of access to health and education services, social norms limit their participation in public life and restrict opportunities, and their low levels of educational attainment result in occupational segregation and inequality. In Bolivia, the schooling levels of indigenous people are approximately three years less, on average, than for non-indigenous individuals. The difference is even greater for indigenous women, suggesting that they are the most disadvantaged in Bolivian society (World Bank, 1994). From research with indigenous communities in the buffer zone of Amboró National Park it was highlighted that on average 44% of women older than 15 years of age were illiterate, compared to on average only 14% of men within the same age group (CARE, 1997). There will therefore be a particular focus on gender issues, and the specific vulnerability context of women in this project.

The contribution of research:

The importance of this research is in part reflected in the UK Government's strategy to support research and action that helps to improve rural livelihoods and the sustainable use of natural resources, by focusing on the different needs of women and men. One of the strategic goals of this approach aims to increase the benefit to the rural poor from the sustainable utilisation of forest resources, and from community participation in managing them.

However, whilst it is recognised that NTFPs are an important resource for rural women, and women play a key role in eliminating poverty, there have also been many gaps identified in the sectoral coverage of existing research. These include an analysis of non-traditional agricultural exports; primary processing activities; traded services; and small-scale informal sector manufacturing (Fontana, 1998). Whilst women have traditionally operated in the subsistence sector, they may not have equal access to the cash economy, because of traditional domestic responsibilities or gender inequality (Rodda, 1993). These gender issues have been neglected in the implementation of many development projects (Southeimer, 1991).

In addition to the role that this research plays in filling information gaps *per se*, it will also contribute to a greater understanding of the impacts of change, and specifically identify those factors that are experienced differently by men and women within the same communities. Economic and environmental pressures affect access to and utilisation of forest resources, and the dynamics of these over time affect men and women quite differently (Brown and Lapuyade, 2002). Women are especially dependent on NTFPs, and as the role of these products has changed markedly over the years with forest products becoming more commercially harvested and traded in much of the world, it has

become increasingly important to capture impact differentiation of commercialisation along gender lines. This project will analyse how changes in NTFP commercialisation may impact differently on women and men and the resulting implications for changing gender relations, livelihoods and welfare, and access to forest and other natural resources.

Research outputs:

Principle outputs from the research are Decision Making Tools [DMTs] to assist communities in successfully developing NTFP resources to increase security of income generation opportunities available to them. Namely, the following will be developed in collaboration with project partners, following comparative analysis of research data:

- *A manual* developed and tested with rural communities, to provide tools for successfully developing NTFP resources. This manual will be developed on the basis of the research carried out in the project's study communities and will then be tested in 'new' communities in Nicaragua. Consultation is underway to ensure that this manual complements or feeds into FAO's manual on Market Analysis & Development for community-based tree and forest product enterprises.
- *An Expert System* for use by decision-makers to evaluate the potential for successful NTFP commercialisation.

Research in Mexico and Bolivia:

Mexico:

In Mexico, 30% of the population is classified as poor and two-thirds of this poverty is located in rural areas. There exists documented evidence that the majority of the 18 million people living in forest communities are poor, and that their needs are not adequately internalised by the country's economic system (World Bank, 1995). In addition, whilst indigenous communities within the most marginalised rural groups are increasingly involved in the commercialisation of forest resources, the non-indigenous or mestizo population, with stronger historical access to physical, financial, and educational resources, tends to control these activities (World Bank, 1995).

Bolivia:

Bolivia is one of the poorest countries in Latin America with social indicators similar to Sub-Saharan Africa, and 70% of the population is classified as poor (World Bank Group, 2000). Poverty is more severe in rural areas, where it is estimated that 94% of the population is poor, and is particularly concentrated in Bolivia's indigenous groups which make up over half of Bolivia's population (mostly Quechua and Aymara cultures), and whose livelihoods are threatened by logging activities (DFID, Country Strategy Paper). Bolivia is eligible for the Heavily Indebted Poor Countries Initiative debt relief and is also one of the pilot countries for the World Bank's Comprehensive Development Framework. It is a good example of a country that has achieved successful stabilisation and implemented innovative market reforms, yet made only limited progress in the fight against poverty (World Bank Group, 2000).

Case study communities:

We are undertaking collaborative research with our in country partners, in 17 selected indigenous case study communities, located in Mexico in 2 of the 3 poorest states in the Republic, and in Bolivia, in some of the most geographically marginalized areas. In all the case study communities, NTFPs are commercialised with varying degrees of success, representing one of the most important income generating options. NTFPs differ in a number of important characteristics including yield, perishability, value, seasonality of availability, etc, and the local communities harvesting these resources differ in a social structures (including gender influence), culture and ethnicity, degree of marginalisation, and access to capital resources (financial, physical, environmental, human and social). A comparative analysis of different NTFPs, considering such variables, can therefore enable the identification of key criteria for successful commercialisation (Marshall, *et al.*, 2001 (a), (b), Newton, *et al.*, 2002).

All of the case study communities are geographically isolated, often located in remote mountainous regions, with poor infrastructure. They all lack various basic services, according to welfare indicators and socio-economic marginality indices, and are characterised by high illiteracy rates, inadequate medical attention, poor domestic conditions, and high mortality. Table 1 summarises some of the key characteristics of our research communities, gender roles and obstacles to NTFP commercialisation.

Research methodology:

One of the greatest challenges facing us as researchers was to design a research methodology which could be successfully applied across different communities, commercialising different products, in different geographical areas, to provide us with information to answer our research questions. In addition, the research is multidisciplinary and is being implemented across 7 different institutions, and in 4 countries, and in 2 languages.

The process of jointly developing research hypotheses proved extremely valuable in providing an integrating framework for the project. In addition, the hypotheses were a useful way of introducing national partners to some of the international theory on NTFP commercialisation, thus providing them with a more holistic research context. The research questions were developed iteratively to provide us with a cross checking mechanism against the research tools to ensure that we were going to generate enough of the right information.

Research Hypothesis & Questions:

The first four research hypotheses are predominantly concerned with the impact of NTFP commercialisation on different groups of participants in the commercialisation process (both within communities and along the market chain) as well as on the environment. The latter two are focused on understanding the different types of market structure that exist for NTFPs and, in conjunction with the earlier hypotheses, their relative impact on participants. The hypotheses were developed at a one-day workshop of the core research team on the basis of extensive knowledge of the literature and own experience. For the purpose of this paper, the research questions for Ho 2 have been detailed, although we recognise that gender relations is a cross cutting issue for all the research hypotheses.

1. Changes in commercialisation in NTFPs have a greater impact on the poorest producers, processors and traders.
2. Changes in commercialisation of NTFPs have a greater impact on women's livelihoods.
3. Increase in the volume of NTFP commercialisation leads to forest overexploitation and/or domestication.
4. Changes in the volume of NTFP commercialisation lead to reduced rights/access to the resource for the poorest producers.
5. The successful commercialisation of an NTFP depends critically on: the existence of an accessible market; potential demand; the absence of substitutes; access by producers,

processors and traders to market information; technical management capacity; organisation; high value / unit wt; trader characteristics (age, experience, education, etc.)

6. The success of poor producers, collectors, processors and traders in NTFP commercialisation depends critically on: the number of suppliers and demanders (market structure); capacity to exert market power; barriers to entry; degree of vertical and horizontal integration; presence of substitutes

The research questions which we developed to help us answer whether changes in commercialisation of NTFPs have a greater impact on women's livelihoods are as follows:

- To what extent are women involved in harvesting, processing and marketing the NTFP?
- To what extent are women involved in transporting the NTFP from the forest to the market?
- To what extent do women have control of the income derived from NTFPs, and therefore, to what extent do they benefit from their sale?
- Are women displaced by men when new technologies for NTFP processing are introduced?
- Is women's social, political and economic status being helped or harmed by NTFP commercialisation?

These questions were designed to capture information pertaining to the current position of women in relation to NTFP commercialisation and the impact of change specifically on women.

Research Tools:

All the research at field level (community, household and along the market chain), has been implemented directly by our in country partners (allowing us to build on established trust with the research communities), with frequent support visits from the project leader, providing a point of integration between all case studies. The research tools were designed to be implemented using a multitude of participatory techniques, including community group work (with different gender, age, wealth groups etc), key informant interviews, household interviews, etc, and partners were encouraged to draw from their previous work with communities (grey and published literature).

Three key data collection tools are being employed in the project:

Community report:

One will be written for each community and their aim is to collate all the information relating to NTFP commercialisation in a particular community: providing an introduction and context to the community; land use; organisation of resources; income and expenditure; labour; information specific to the NTFP collected; commercialisation from the community perspective; and the social, gender, environmental and political changes impact of changes in commercialisation.

Although predominantly qualitative, some of the data included in the report is of a quantitative nature and can be codified for entry into a database. A secondary aim of the community reports is to provide sufficient contextual background to allow for the development of a precise and locally acceptable survey tool. In addition to the outline structure, NGO partners were provided with suggestions and detailed activity guidelines on how to obtain the necessary information (Schreckenber and Marshall 2001). A final aim of the reports is to show how representative these communities are in relation to other communities in our target population and each one written to a standard format to enable comparative analysis.

Market report:

One will be written for each product and their focus is on the overall marketing chain for the product, concentrating in particular on elements outside the study communities. The market report, in effect, starts at the point where the community report stops. As with the community report, it will be mostly qualitative but also include some quantitative data that could be extracted into the database. Initial contact with our partners identified their self perceived weaknesses in handling marketing data, so our NGO partners received training in key marketing concepts.

Share (%) of income from NTFPs	0-25								
	26-50								
	51-75								
	76-100								

The findings in tables 2 and 3 can then be combined to test certain hypotheses, eg:

- *if* it is found that NTFP actors are generally poor, female, lacking finance/land (table 5)
- *and* these traders derive a *relatively* high share of income from NTFP activities,
- *then* this would help to confirm hypotheses 1 and 2 above: “Changes in trade in NTFPs have a greater impact on the poorest producers, processors and traders and on women’s livelihoods.

In addition, the project cycle has been planned to facilitate some triangulation of our results, including research with small working groups at community level, for example to facilitate better understanding of how women perceive successful commercialisation, and help us to explore women’s control of expenditure of their own income and measure less tangible & or coincidental or non-linear benefits (children getting higher education levels, better nutrition, lower incidence of illness).

Discussion:

With regards to executing a multi disciplinary, multi partnered research project, the practical lessons learnt have been numerous and valuable. We have seen the value of jointly developed hypotheses as integrating factors for the wider project research team, and the value of early and frequent joint analysis. We have also benefited from the opportunity to facilitate reciprocal training of researchers and provide interim data analysis workshops Table 4 illustrates the outcome of undertaking intermediate data analysis, which helped focus all project partners on key thematic questions and illustrate the value of a research framework. It was drawn up by project participants and indicates across research hypotheses 1 – 4, which aspects from their own case studies apply and which ones do not. It therefore gave us a preliminary opportunity to accept or reject the hypotheses. In addition, the trial data analysis around central 6 research hypotheses allowed the research team to evaluate how well our existing research methods answered the questions, and how well the different research methods can be integrated. Arriving at this point has also provided a useful deadline to focus the minds of all the researchers involved (economists, Bayesian networkers and community-level socio-economic and gender researchers) and helped us to bring the different research strands into step with one another to achieve methodological integration with survey tools solidly based on results of community, household, and market-level research.

We do acknowledge the need for intensive management to achieve “consistency” between research partners in terms of research implementation and interpretation of data, and the potential for this to be time consuming. However, the benefits of a full time project leader providing a constant point of contact, and vital intra project link (having visited all fieldwork sites), is clearly seen in the quality and quantity of social capital that has been developed over the last 18 months of the project cycle.

It is worth mentioning the importance of transparency *vis a vis* what we will deliver as a research project, acknowledging the sometimes less tangible outputs during the life of the research, as opposed to a development project. A research project is much more about delivering longer-term benefits, both directly as outputs and indirectly via the design and implementation of future projects and policy changes. The success of this project will depend largely on our ability as a research team to capture and measure the impact of change.

There is also an issue of recommendation domain when we consider how wide reaching our outputs (as research methodology and decision making tools) can be. For us to fully understand the dynamics between NTFP commercialisation and poverty alleviation, gender impact, and resource use and tenure, we have worked closely with a limited number of case study communities. In addition, NTFPs are incredibly diverse products, and some of this diversity will be directly relevant to certain products being successfully commercialised. We hope that through the careful selection of our case study communities and products (exhibiting a variety of characteristics), and the sensitivity of our research tools, that we will be confident in the ability of our decision aids to work adaptively, in many forest dependent rural poor communities throughout Latin America.

Another challenge which may result from undertaking gender sensitive research, is that we may encounter situations where there is a conflict of interest and trade-offs occur. It may be for example, that by promoting a strategy that increases overall household or community income (e.g. a new processing technology), actually contributes to decreased female employment, or transfers decision-making power, and control of income from women to men. At this point our methodology must make it clear how to firstly respond to these potential case scenarios, and also that communities themselves will need to identify their objectives for NTFP commercialisation, before a decision is taken.

Much of our research findings to date emphasize the importance of social aspects of sustainability, which requires that natural resource use does not disrupt social harmony beyond the capacity of social structures to tolerate such change (Wollenberg 1995). It is worth noting that whilst the increased empowerment of women might seem a logical and desirable outcome of developing the NTFP resource, there may be social costs in terms of disunity within the community. Analysis of the prospects for community forest management in Chiapas, southern Mexico, indicated that communities there are acutely aware of the dangers of internal division and seem very cautious of risking their social equilibrium. As a result a cautious approach to resource management which offers social security is valued more highly, than increased economic returns (Konstant *et al.* 1999).

Any external assistance to communities recommended via the research outputs, and our policy briefing paper we are contractually obliged to deliver, will need to be very carefully planned and executed. However, such support could enable the rural poor, and especially women, to benefit more fully from forest resources, which will likely prove one of the most rewarding and environmentally benign ways of fighting rural poverty.

Conclusion:

This paper has sought to capture and explain the importance of mainstreaming gender in natural resource research. It illustrates the value of rigorous planning and iterative development of research questions and data analysis approaches, between project stakeholders to ensure thematic coverage. It also highlights some of the challenges of sensitively exploring gender relations in research.

It describes how our research methodology, compiled of flexible participatory techniques and more structured research tools, has generated both qualitative and quantitative information that will provide valuable insight into the impact of change in NTFP commercialisation. It documents how, in achieving sensitivity to the differences in inter gender perceptions, we will be better placed to understand the differentiation in impact of change upon male and female actors in NTFP commercialisation.

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Table 1. Selected case study products and communities in Bolivia and Mexico, and some of their key characteristics.

BOLIVIA

NTFP name & type	Trade perimeter (market)	Participation in NTFP activities	Income generating activities in order of importance	Social role (gender)	Commercialisation opportunities and obstacles
<p>Jipi Japa (<i>Carludovica palmata</i>)</p> <p>Palm – leaf used for weaving various artesan items form mats to hats.</p>	<p>Local, national & international use. Found throughout country and indeed other Latin American countries. Two distinct marketing routes from community.</p>	<p>Almost all the community participate. Some weavers sell directly to final consumer and others are part of a cooperative (externally managed) trading organisation (CIDAC) set up during last 15-20 years.</p>	<p>Agriculture; (Rice) NTFP; Livestock; production.</p>	<p>Men harvest; women process and trade. The organisation is exclusively for women.</p>	<p>Productivity limited to small markets & potential unrealised outside of these; identified lack of capacity to diversify product range; competition from non-traditional producers in other regions.</p>
<p>Copal and incense (<i>Clusia</i> and <i>Hymenaea</i> sp.)</p> <p>Resin tapped for incense used mostly in religious ceremonies.</p>	<p>Local and national use, and unofficial export to N. Argentina and Chile.</p>	<p>Majority of community participates.</p>	<p>Agriculture; (maize, rice, yucca, banana) NTFP; Livestock.</p>	<p>Men harvest and also predominantly trade. There is no processing at present taking place.</p>	<p>Limited market buyers; some entrepreneurs pay collectors a deposit to collect (& sometimes transport) and share profit; not much bargaining power over market price.</p>
<p>Cacao silvestre / del monte / chocolate criollo (<i>Theobroma cacao</i>)</p> <p>Seed pod used for cocoa</p>		<p>All of the community participates.</p>	<p>Agriculture; Hired labour; Livestock; Hunting; Cocoa (also considered a traditional activity).</p>	<p>Men collect and women process (either as beans or ground into a paste).</p>	<p>Low productivity; decreasing amount of buyers; poor access to and form communities; only sell small volumes.</p>
<p>Goma (<i>Hevea brasiliensis</i>)</p> <p>Tapped natural rubber.</p>	<p>Mostly local mining but diminishing greatly; Tomachi trade controlled by Peruvians.</p>	<p>The majority of one case study community participate, and only 11% of the other.</p>	<p>NTFP; Agriculture; (rice) Coffee; Livestock.</p>	<p>Men collect, women process, and both commercialise. This was established over 50 years.</p>	<p>Extensive intra-household competition; In Tomachi the resource is concession controlled production which favours sales of large quantities.</p>

NTFP name & type	Trade perimeter (market)	Participation in NTFP activities	Income generating activities in order of importance	Social role (gender)	Commercialisation opportunities and obstacles
Palma soyate (<i>Brahea dulcis</i>) Palm leaf used for plaiting and weaving.	Direct local trade and via intermediaries to regional & national markets.	All the community participate.	\$ from migrated individuals; Hired labour; Livestock; Palm weaving; Agriculture; Subsidies.	Everyone > 8 years old, but mostly women, the elderly and children.	No product value; no bargaining power.
Maguey (<i>Agave cupreata</i>) Pulp / juice fermented into traditional beverage.	Local, regional, national – inter-National.	The vast majority of households participate.	Agriculture; Livestock; NTFP; \$ from migrated individuals;	Men harvest, process and sell (to intermediaries who are infamous for watering down). Never been an activity which involved women.	Assembly decide who can harvest from community land, and who to sell to, and the money benefits whole community; policies are more generalised and don't consider community norms.
Palma camedor (<i>Chamaedorea elegans</i> , <i>C. concolor</i> , <i>C. oblongata</i>) Leaf with floristic use.	National and export to USA.	Only about 20% participation.	Agriculture; Livestock; NTFPs; Hunting.	Men and women harvest and sell – cannot bulk up in community as requires refrigeration.	Pay low prices so tend to over harvest leading to increased cultivation and harvesting with permits. The palm is also being extensively domesticated in other areas of Mexico.
Tepejilote (<i>Chamaedorea tepejilote</i>) Inflorescence eaten as a local delicacy (similar to palm heart)	Local, regional and 'nostalgic' markets in Los Angeles.	<10% in one case study community and >60% in the other.	Remittances; Coffee; Agriculture; Hired labour; NTFP; Hunting.	Mostly women and children.	No credit available to add value locally to market outside region; very seasonal supply; poor access to information; can't always meet demand.
Pita (<i>Aechmea magdalenae</i>) Bromeliad leaf from which fibre is extracted and made into thread for stitching.	National – principality to Jalisco (leather workers).	Over half in one case study community, and in the other only about 30%.	Pita historically important to the economy; interest in its production declined as coffee increased. Coffee is now in huge decline.	Women and men harvest and process leaf, women predominantly process the fibre, and men commercialise.	Lack of producer organisations results in more intermediaries; the market is also saturated with low quality fibre from Chiapas and Guatemala.
<i>Tricholoma magnivelare</i> , <i>Boletus edulis</i> and <i>Amonita coesarea</i> : 3 varieties of Wild Edible Fungi	Regional & National markets and <i>matzutake</i> exported to Japan.	Only about 20% participation.	Agriculture Migration NTFP	Women and children, no processing.	Highly perishable so have to sell on quickly; resource availability highly variable.

Table 4. Intermediate data analysis, illustrating how information partners had collected at mid project cycle could be used to answer the different research hypotheses.

PRODUCT	H 1	COMMENTS	H 2	COMMENTS	H 3	COMMENTS	H 4	COMMENTS
<i>Palma Camedora</i>	√	Complementary and sustained activity.	X	There is no direct gender impact on the commercialisation of the product.	1. √ X 2. √	1. In one community -overexploited & -domesticated 2. In another -domesticated	1.X 2.X	
<i>Cacao</i>	√	Temporal activity with low income but collection undertaken from large resource base.	√	There is no direct gender impact on the commercialisation of the product.	1.X 2. √	1. Doesn't apply. 2. Domestication has begun.	1.X 2.X	Extensive areas of collection. Not relevant (6 Ha.)
<i>Tepejilote</i>	√	Product equally accessible to all groups.	√	Women have increasingly less involvement in commercialisation, due to the loss of an intermediary and the replacement intermediaries are located out with the community.	x	Quantity collected the same, just person involved.	X	No internal rules – equally accessible to all.
<i>Mezcal de Maguey</i>	X	Those who produce are among the least poor.	X	Traditional male custom which passes down through the generations.	1. √ 2. √	1. Over-exploitation 2. Cultivated	1.X 2.X	
<i>Goma (Santa Rosa)</i>	√	Reflected in high immigration from the area: community size has decreased by 22 families.	√	Does not directly benefit women, but never the less, single women lose out.	N/A	Not applicable.	X	Not relevant.
<i>Goma (Tomachi)</i>	√	Those involved are all poor.	X	Women have only limited direct involvement.	N/A	Not applicable.	√	As the concessions are private, and this limits the access of potential workers in the community.

Source: Marshall, E. (ed.) 2002.

√ = accept hypotheses

X = decline hypotheses