Small and Medium Forest Enterprises:
Instruments of Change in the Developing World

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RIGHTS + RESOURCES

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The Rights and Resources Initiative

The Rights and Resources Initiative is a global coalition to advance forest tenure, policy and market reforms. RRI is formed by international, regional and community organizations engaged in conservation, research and development.

The mission of the Rights and Resources Initiative is to promote greater global action on forest policy and market reforms to increase household and community ownership, control, and benefits from forests and trees. RRI is coordinated by the Rights and Resources Group, a non-profit organization based in Washington D.C. Please visit http://www.rightsandresources.org for more information.

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Acronyms

CATIE	Tropical Agricultural Research and Higher Education Center
CIFOR	Center for International Forestry Research
CFE	community-based forest enterprise
ETLA	The Research Institute of the Finnish Economy
EU	European Union
FAO	Food and Agricultural Organization of the United Nations
GDP	gross domestic product
GEMINI	Growth and Equity through Microenterprise Investments and Institutions
IBGE	Brazilian Institute of Geography and Statistics
IBGE-SIDRA	Sistema IBGE de Recuperação Automática – Bases de Dados Agregados
IFC	International Finance Corporation
IIED	International Institute for Environment and Development
ILO	International Labour Organization
ITTO	International Tropical Timber Organization
MA&D	Market Development & Analysis
MSE	micro and small enterprise
NGO	non-governmental organization
NTFP	non-timber forest product
ODI	Overseas Development Institute
OECD	Organization for Economic Co-operation and Development
RRG	Rights and Resources Group
RRI	Rights and Resources Initiative
SME	small and medium enterprise
SMFE	small and medium forest enterprise
SSE	small-scale enterprise
SSI	small-scale industrial enterprise
UKTFF	United Kingdom Tropical Forest Forum
UNFF	United Nations Forum on Forests
US	United States

Key Points

- Small and Medium Forest Enterprises (SMFEs) are key contributors to employment of forest-based economies in both the developed and developing world.

- SMFEs make significant economic contributions to the livelihoods and well-being of significant numbers of poor people around the world. Because existing SMFEs tend to be labor-intensive and new SMFEs can be significant incubators of employment, they are seen to be an important element of pro-poor poverty reduction strategies in developing regions.

- While there is a dearth of data on the economic contributions of SMFEs, it has been estimated that they directly employ over 20 million individuals worldwide; however, this figure may be nearer to 140 million when the informal sector is taken into account. Country level data on the significance of SMFEs in the developing world is even harder to come by, but the work that has been conducted suggests that the vast majority of forest-based commerce in these regions (upwards of $US 130 billion) is derived from SMFEs.

- SMFEs are characterized by a diverse range of stakeholders, actors, businesses, and structures, with dynamics varying from region to region. The range of forest-based products and services that SMFEs can provide is also vast, but scale generally precludes them from participating in highly competitive commodity-oriented export markets. Increasingly, non-timber forest products (NTFPs) provide opportunities for small-scale producers, either as a primary source of income or a diversification strategy.

- One promising option for SMFEs to overcome issues associated with scale is by means of formal or informal aggregation through networks, clusters, or associations.

- There are a number of possible interventions and policy reforms that governments, civil society, and development agencies can initiate for fostering SMFEs. While direct subsidies may be falling out of favor, there are instances where they are justified. However, there is general agreement that interventions and policy reforms should address the general need to create more enabling business and institutional environments for SMFEs to establish and thrive.

- In order to put forth the concept of SMFEs as a pro-poor strategy for the developing economies, there is a salient need to quantify the degree to which they contribute to employment, well-being, and economic growth. In particular, survey research and case study methodologies are recommended as a means of enumerating the significance of SMFEs. A logical starting point would be with forest-based economies that are more conducive to supporting small-scale forest enterprises, most notably in Asia, Africa, and South America.

I. Introduction

Forests play a vital role in improving the livelihoods and alleviating poverty in the developing world. According to the World Bank (2002), forests directly contribute to supporting the livelihoods of approximately 90% of the world's poorest people – either in the form of subsistence, conversion of forests to agricultural uses, or income derived from a diverse range of timber products, non-timber products, or ecosystem services (Arnold, 2001; Sunderlin *et al.*, 2005).

While the complex relationships between forestry and poverty reduction in the developing world have recently been disentangled, well documented, and even demystified to a certain degree (see Angelsen and Wunder, 2003; Arnold, 2001; Scherr *et al.*, 2003; Sunderlin *et al.*, 2005), extreme poverty conditions persist in forested communities around the world. Almost half of the world's population – 2.8 billion people – still live on less than two dollars per day (World Bank, 2001), and paradoxically, much of this extreme poverty occurs in regions that are rich in forest resources, especially in the tropics. Unfortunately, empirical evidence has shown that tropical forests are vanishing at alarming rates as a result of deforestation for subsistence uses, agricultural clearings, and commercial interests (Achard *et al.*, 2002).

Clearly, much more work is needed to better understand how forests can more effectively contribute to addressing the needs of the world's poor. One of the key questions revolves around the appropriateness and efficacy of certain interventions and policy reforms. A potentially promising strategy that has been put forth by development agencies, NGOs, and governments alike as an alternative to more traditional large-scale industrial forestry practices is to catalyze and support small and medium forest enterprises (SMFEs) in these regions. The underlying logic here is remarkably simple – SMFEs have a long history of being effective local-level instruments in the generation of economic wealth and the creation of employment. Moreover, they tend to operate at a scale that is more conducive to conservation-based strategies and goals related to sustainability are generally more attainable. And while some work has recently been conducted on the potential of community-forest enterprises in this regard, the contributions that SMFEs have made are not well documented and little attention has been focused on these enterprises; a surprising fact given their collective economic importance (Macqueen and Mayers, *forthcoming*). In fact, it is safe to say that there is a veritable paucity of information with respect to SMFEs, and in particular, their relationship to poverty reduction in the developing world. Simply put, this information is not collected, or when it is, it is confounded by variations in definitions and an inability to enumerate the ubiquitous and increasingly important informal sector that exists in developing regions (Macqueen and Mayers, *forthcoming*).

This report attempts to help address this information gap, in part, by synthesizing much of the relevant literature on SMFEs. In particular, a definition of SMFEs is offered, followed by discussions of their significance and dynamics in the developing world. The report ends with a consideration of various interventionist strategies and policy reforms, followed by recommendations for research priorities to provide a better understanding of SMFEs operating in developing countries. It should be noted that this report is a partial response to the poverty-related forest research topics identified by CIFOR in Angelsen and Wunder (2003), and specifically, the need for further clarity on the role of SMFEs in pro-poor economic growth. This topical area was given a high priority and proposed methodological approaches included a literature review, secondary data analysis, and primary data collection and analysis. This report primarily deals with the first two approaches, although recommendations are made for the third.

II. What are SMFEs?

Defining small and medium forest enterprises (SMFEs) is no simple task. SMFEs are an industry-specific type of small and medium enterprise (SME) situated within the forest sector. Unfortunately, it is even difficult to unravel a meaning for SMEs, with standards varying from country to country (Ayyagari *et al.*, 2003). In fact, there is no universally accepted definition of SMEs, other than to say that they are companies with metrics (usually number of employees or annual turnover) that fall below a certain threshold. It is in the delineation of these limits where definitions vary. Oftentimes, definitions also vary with the scale of respective economies. For instance, in developed economies where there is a larger variation in enterprise types, medium-sized companies would be considered large in less developed nations.

Globally, the European Union seems to have taken the first steps in formally adopting a universally accepted definition of SMEs, but even so there is still debate among nations in the EU. On May 6, 2003, the Commission of the European Communities adopted a definition of medium-sized, small and micro businesses (European Commission, 2007), which provides a framework for defining SMEs (Table 1).

Table 1: European Commission definition of micro, small, and medium sized businesses.

Enterprise Type	# of Employees	Revenues (Turnover)	Revenues (Balance Sheet)
medium-sized	< 250	≤ € 50 million	≤ € 43 million
small	< 50	≤ € 10 million	≤ € 10 million
micro	< 10	≤ € 2 million	≤ € 2 million

In other words, SMEs are defined by the European Commission as companies with less than 250 employees. With respect to financial criteria, revenues cannot exceed 50 million euros (measured as turnover) or 43 million euros (measured on a balance sheet). In addition, the European Union specifies terms of ownership, stating that SMEs must be independent, with less than 25% being owned by outside interests (European Commission, 2007).

And while the transposition of a global standard like this to the forest sector makes some conceptual sense, there is unfortunately, also some variation in the definitions of SMFEs. For instance, Mayers (2006) provides a working definition of SMFEs as "a business operation aimed at making a profit from forest-linked activity, employing 10–100 full-time employees, or with an annual turnover of US$10,000–US$30 million, or with an annual roundwood consumption of 3,000–20,000 m^3." Macqueen (*undated*) defines SMEs within the context of sustainable development as those enterprises "with less than 100 employees without any lower cut-off." In another report on enterprise associations, Macqueen (2004) defines SMEs as enterprises "employing 10–99 full time employees or with a fixed capital investment of US$1,000–500,000." Spantigati and Springfors (2005) provide a somewhat more general definition as "[forest-based] enterprises whose economic activities are undertaken mainly at the individual or household level, usually employing members of the family or close relatives and neighbors, and where salaried labor is negligible."

Definitions of SMFEs are also confounded by the existence of several types of business and ownership structures, spanning both formal and informal sectors of the economy and producing a wide range of forest-based goods and services. The wide variation of inputs and value-addition that exists within the forest sector also obfuscates matters and makes measures based on revenues difficult. Lastly, there is a dearth of data on SMFEs operating in many countries, both with respect to their overall economic

contributions and the products and services that they offer (Macqueen and Mayers, *forthcoming*). All of this points to the fact that perhaps it is easier to define SMFEs by what they are not.

SMFEs are *not* transnational companies, multinational corporations, publicly owned companies, or large facilities of any kind. Simply stated, they are forest-based enterprises that employ a relatively small number of people. However, they can – depending on their business and ownership structures – grow to become large businesses (Macqueen, 2006). While it has been estimated that 80% of the financing for SMFEs around the world comes from owners, their friends, and families (Mayers 2006), business structures and arrangements can take on many forms, including private ownerships, limited partnerships, contracts and subcontracts, collectives, cooperatives, and associations, community-owned enterprises, and informal operations. They each share in common an engagement in forest-based activities as their primary sources of income, but these activities are virtually limitless, ranging from the provision of ecosystem services and the production of timber and non-timber forest products (NTFPs), to the processing of a wide variety of commodity and value-added wood products. SMFEs have also been

It is perhaps worth noting one final distinction. SMFEs provide a viable business alternative to the large export- and commodity-oriented business models and concessions that have long dominated the global forestry landscape. They differ in that they are intrinsically tied to the communities in which they operate, and as such, provide higher potential and ample opportunities for local communities to provide much needed goods and services in a sustainable manner, generate wealth that stays within the communities, provide local employment and improve the livelihoods of the rural poor, and directly address questions related to the restitution of customary and indigenous tenure and access rights. Nowhere is this more pressing than in the forested communities of developing regions. In this light, SMFEs are effective instruments of economic development and social change and can play an extremely important role in the long term health, viability, and sustainability of forest-based communities around the world.

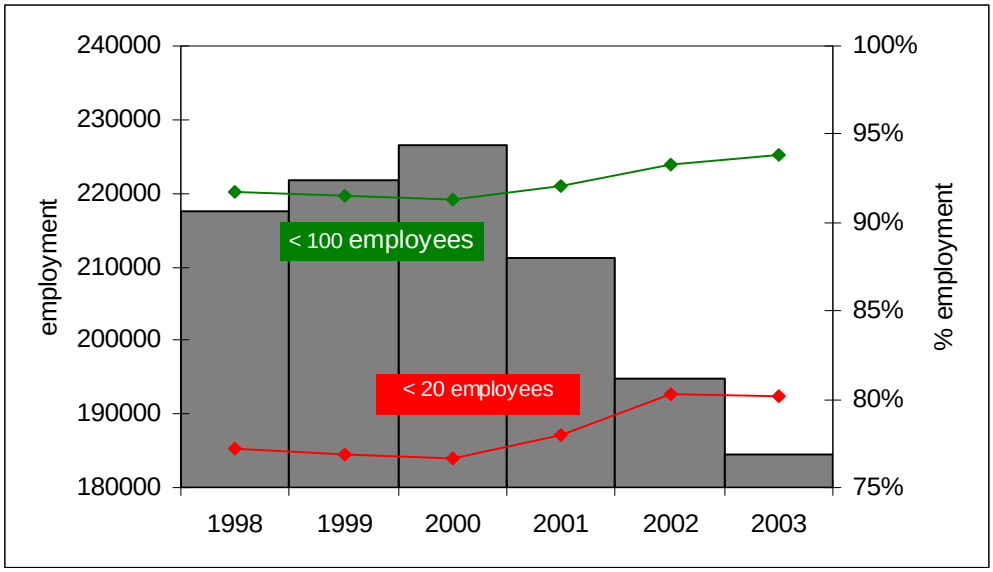
III. SMFEs in the Developed World

While discourse on the role of SMFEs as instruments of social and economic change in the developing world is becoming increasingly common, the economic importance of SMFEs is by no means restricted to these regions. In the United States – where large multinational companies have historically tended to dominate forestry dialogue and lobbies – SMFEs currently contribute over 37.4% of the total employment in the solid wood products processing sector (US Census Bureau, 2007). In the European Union, it is estimated that 90% of the forestry-related firms employ fewer than 20 workers (Hazely, 2000).

Interestingly, in the wake of globalization, intense competition, and 'big business' migrating to lower cost regions of the world, it seems that SMFEs in developed countries are becoming an important means of mitigating against overall declines in employment in some sectors of wood processing. In most subsectors of wood processing, employment is on the decline in developed economies, yet the contributions that SMFEs make to employment are either remaining steady or growing (Kozak, 2007a; Kozak 2007b). Two examples worth noting are the household wood furniture subsector in the United States (Figure 1) and the sawmilling subsector in Sweden (Figure 2).

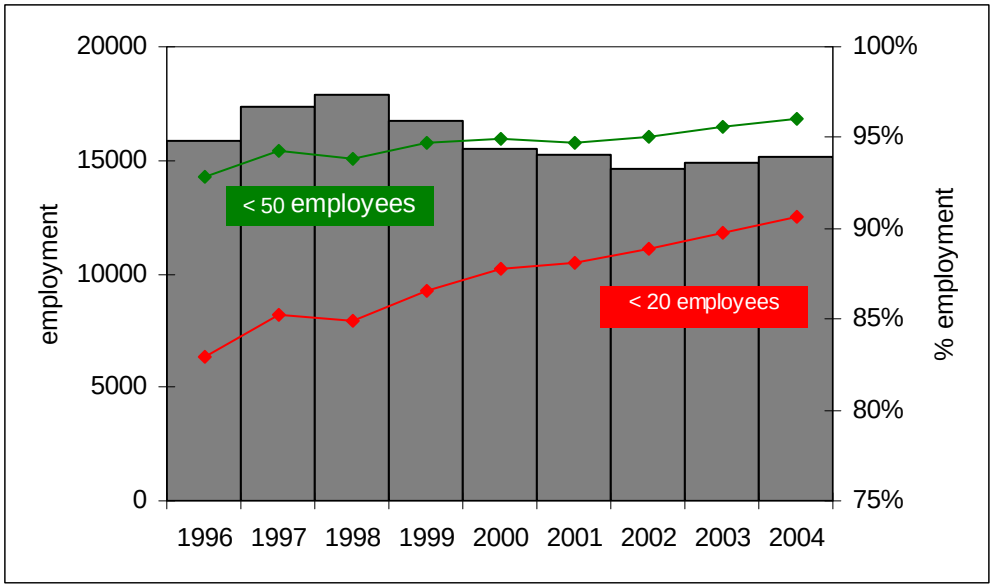
The solid wood products subsector that has perhaps seen the worst recent declines in employment in the United States is wood household furniture manufacturing. This decline has been well document and is attributed to the emergence China and other offshore producers as global market leaders in the production of furniture, especially lower cost commodity furniture. Despite these dramatic decreases in employment, SMFEs in the US appear to be somewhat resilient, with contributions to employment increasing for firms with fewer than 100 employees, and particularly for firms with fewer than 20. While it is difficult to untangle the dynamics of this complicated industry, the reasons for this likely revolve around the continued existence of smaller, but sizable niche markets (mostly urban) that are demanding higher end furniture which incorporates strong design aesthetics and is not mass produced.

Figure 1: Total employment and proportion of employment attributed to firms with fewer than 20 and 100 employees in the United States wood household furniture subsector.



Source: US Census Bureau, 2007

Figure 2: Total employment and proportion of employment attributed to firms with fewer than 20 and 50 employees in the Swedish sawmilling subsector.



Source: Eurostat, 2007

These trends can also be seen in certain commodity subsectors like the Swedish sawmilling industry. Here, employment levels have remained remarkably steady over the last decade, buoyed by robust trade within Europe and successful expansion into new markets, but are now beginning to see modest declines. The proportion of employment that can be attributed to SMFEs (firms with fewer than 50 and 20 employees, respectively) are due mainly to a growing value-added sector in Europe which leads to higher demand for specialty appearance products produced in lower quantities by smaller manufacturers and the emergence of highly automated and efficient sawmills that are not particularly labor-intensive. In either case, there seem to be opportunities for small producers of sawn wood products to form and succeed in today's global marketplace.

Further analysis of the contribution that SMFEs make to employment in the solid wood products sectors of the developed nations reveals the following general trends. First, the growth of 'small' SMFEs seems to be outpacing that of 'medium-sized' ones. Second, there is a very clear 'value-addition' effect, with opportunities for growth being more abundant in the value-added sector. It seems that there exist fewer opportunities for growth in the commodity sector, likely due to a high degree of competitiveness, the need to achieve economies of scale, and high capital requirements.

Opportunities for the growth of SMFEs also very much seem to depend on the markets which they serve. For example, the current buoyancy of the housing sector means that there is greater potential for companies which supply the house construction, renovations and remodeling, and home furnishings markets. There also seem to be an abundance of opportunities for SMFEs to supply smaller niche markets (consumers and/or industrial users) by producing specialty products that do not compete directly with commodity goods. The same holds true for companies which serve localized markets or provide services and customized solutions as a means of maintaining their competitiveness (Kozak, 2007a; Kozak 2007b).

From a development perspective, it is of value to track the progress of SMFEs in the developed world, and to note the economic contributions that they can make in regions where policy conditions are

conducive to their existence and their ability to compete in a free market economy. Historically, SMFEs have been important instruments of economic growth in developed countries. Nowadays though, they are becoming even more vital and policy makers and the business community would be well advised to take note of these trends if they wish to catalyze and nurture the SMFE segment as a means of mitigating against overall declines in employment in the solid wood production sectors. It is logical, then, to ask whether there are (or could be) analogous patterns in the developing world, where oftentimes SMFEs are not even given legal status. Specifically, can SMFEs play an important role in improving the economies and reducing poverty in forest dependent developing countries?

IV. SMFEs in the Developing World

Significance of SMFEs in Developing Regions

Information on the contribution of SMFEs to the economies of developing countries is limited at best. It is, however, known SMFEs make significant contributions to the livelihoods and well-being of innumerable people around the world, especially the rural poor living in or near forested landscapes. There are many reasons explaining why SMFEs are effective poverty reduction tools in developing regions, many of which are fairly self-evident: (1) they tend to be labor-intensive and consequently are able to make positive and long-term contributions to employment and economic development; (2) they are able thrive and grow given an enabling environment, favorable market conditions, and the appropriate business structures; (3) they cater to local and domestic markets which are growing in importance; and (4) they rely on the empowerment of local entrepreneurs who have vested interests in making their businesses successful. But SMFEs typically pursue multiple objectives beyond just employment and wealth creation, including, "distribution of dividends among stakeholders, community development, greater participation in political dialogue, and improved local safety nets" (Donovan *et al.*, *undated*; Donovan *et al.*, 2006).

According to Mayers (2006), 50% or more of the forestry-related employment in many countries is directly attributed to SMFEs. It has been estimated that SMFEs provide employment to approximately 20 million people worldwide (Macqueen *et al.*, 2006a), and that 8 million individuals are directly employed from small-scale forestry and wood processing enterprises alone (Macqueen and Mayers, *forthcoming*). However, neither of these estimates takes into account employment in the informal sector (see section on *SMFEs and the Informal Economy*).

It is also known that the majority of producers of solid wood products worldwide can be characterized as SMFEs (Mayers, 2006). This is likely being driven by two factors: (1) the vast majority of solid wood products are made and sold locally to domestic markets, and thus, do not require the scale that large producers provide; and SMEs, in general, "represent one of the faster-growing industrial sectors in the world" (Canby, 2006). Mayers (2006) posits that SMFEs can comprise 80–90% of all forestry enterprises in many countries, and in this light, estimates of over $US 130 billion of gross value-added being contributed by these enterprises worldwide are hardly surprising (Macqueen, 2004; Mayers, 2006).

SMFEs and the Informal Economy

Despite the impressive economic contributions described above, the reality for developing countries is that many SMFEs exist within the informal sector. Attempts at defining the informal sector, also known as the shadow, hidden, illegal, or underground economy, have been made and employed in various contexts (see Feige, 1994; Frey and Pommerehne, 1984; Lubell, 1991; Schneider, 1994; Smith, 1994). However, there does not appear to be an accepted standard definition of the term. That said, most interpretations underscore the fact that shadow economies are involved in the market-based production of goods and services, but that the incomes derived from these activities go unreported or undetected to authorities (Schneider and Enste, 2000). The market-based activities may be illegal (drugs, stolen goods, etc.) and transactions may take the form of nonmonetary barter arrangements (Mirus and Smith, 1987). More commonly, though, it is simply a question of being unregistered and/or evading taxes. Perhaps more important than providing a cohesive definition of the informal sector are estimates of its size. Measured as a percentage of national GDPs, the informal economies of developing, transition, and developed countries are estimated to be between 13–76%, 9–43%, and 7–18%, respectively – and growing (Schneider and Enste, 2000). In the developing world, the highest rates of informal economic activity are generally seen in Africa (between 39–76%), followed by Central and South America (25–60%) and Asia (13–70%) (Schneider and Enste, 2000).

There is no reason to believe that forest sectors in developing region behave in a dissimilar manner, and evidence (much of it anecdotal) supports this assertion. It has been tentatively estimated that some 30 million individuals worldwide are employed in the informal economy, compared to 17 million that are employed in the formal forestry sector (Poschen and Lövgren, 2001). Most of this employment is subsistence-related and occurs in microenterprises located in developing regions (Macqueen and Mayers, *forthcoming*). Mayers (2006) reckons that the estimate may be nearer to 140 million individuals working in "informal forestry microenterprises, mainly in developing regions". In either case, it is clear that the informal sector is pervasive in forestry economies of developing countries.

It is worth noting that many of the SMFEs operating in the informal sector might be considered 'illegal', in as much as they are not legally registered or because they rely on timber that has been harvested without adhering to formal regulations. This may even be the case for very small family businesses harvesting wood and NTFPs for fuel and subsistence on their own lands. Others may lack the incentive to formally register, either because of myriad complex legal or registration requirements, or simply as a means of tax avoidance. Whatever the case, these informal enterprises face many of the same challenges as firms operating in the formal sector – corruption, bribes, and limited access to financing and other public services. Their importance with respect to contributions to local livelihoods cannot be understated, and perhaps international organizations and NGOs need to be taking a more active role in understanding ways in which these firms can be legitimized and made legal (Kozak and Canby, 2007; Scherr *et al.*, 2003).

Country Level Information and Data

In general, country level data on the economic and employment contributions of SMFEs to developing regions is limited, although this is beginning to change. To date, much of the country-specific work on this sector has not been on enumerating the sectors so much as on cases which serve to highlight the viability and feasibility of SMFEs as business alternatives, and discuss the various opportunities and constraints that they face. The work of three organizations is notable in this regard: the Food and Agricultural Organization (FAO) of the United Nations; the International Institute for Environment and Development (IIED); and most recently, Forest Trends / Rights and Resources Group (RRG) in cooperation with the International Tropical Timber Organization (ITTO).

Past and Current Studies:
FAO has developed a number of cases for small-scale enterprises engaged in the provision of various forest goods and services in China (Nicholson *et al.*, 2006), Columbia (Lozado *et al.*, 2006), Gambia (Dampha and Camera, 2005), the Lao People's Democratic Republic (Ledecq *et al. 2006*) and Uganda (FAO, *undated*; FAO, 2005a). These cases set about to analyze "the enabling conditions for small-scale tree and forest enterprises development" and were conducted in tandem with ongoing small-scale forestry projects in Burkina Faso and Mali, Chile, Kyrgyzstan, Mongolia, Mozambique, Nicaragua, and Serbia (FAO, 2007). An ancillary report was also produced on the barriers to microfinancial services – banks, NGOs, financial cooperatives, traders, buyers, friends and family, money lenders, etc. – for local, small-scale forest enterprises, using case studies of SMFEs in Guatemala, Peru, Nepal, and Sudan (Spantigati and Springfors, 2005).

While it is difficult to distil all of the results of these case studies, some common themes emerge. Underpinned by the Market Development & Analysis (MA&D) framework of identifying potential enterprises, identifying promising products and market opportunities, and developing a business plan (Lecup and Nicholson, 2000), these cases provide compelling evidence that small-scale enterprises in developing regions can provide a variety of forest-based products and services (wood and non-timber), and do so in a manner that is income-generating, socially and environmentally sustainable, and conservation-oriented. In addition, these case studies underscore the importance of community empowerment and participatory approaches in developing such enterprises as a means of improving local peoples' livelihoods.

IIED conducted an ambitious set of country level studies aimed providing a better understanding of the dynamics of SMFEs in the developing countries of Brazil (May *et al.*, 2003), China (Sun and Chen, 2003), Guyana (Mendes and Macqueen, 2006; Thomas *et al.*, 2003), India (Saigal and Bose, 2003), South Africa (Clarke and Isaacs, 2005; Howard *et al.*, 2005; Lewis *et al.*, 2004), Uganda (Auren and Krassowska, 2004), and Vietnam (Phi *et al.*, 2004). In addition, supplementary reports were provided on the feasibility of business associations in many of these regions (Bose *et al.*, 2006; Bukula and Memani, 2006; Figueiredo *et al.*, 2006; Kazoora *et al.*, 2006; Ousman *et al.*, 2006; Weyerhaeuser *et al.*, 2006).

These reports are not case studies *per se*. However, they do provide country diagnostics which demonstrate that SMFEs make extremely important contributions to the local economies and livelihoods of these regions. Relevant and in-depth information regarding supply constraints, sustainability issues, market opportunities, industry dynamics, policy settings, the competitive environment, and institutional arrangements is also given for each of the case countries. Again, the volume and variability of the data makes it difficult to synthesize. However, these reports provide valuable data on many of the constraints and enabling factors for SMFEs operating within each of the regions and strong recommendations are made to increase the visibility of the networks of SMFEs that exist so that the sector is no longer overlooked by policy makers and development initiatives seeking solutions to improve local livelihoods and reduce poverty conditions.

Recently, Forest Trends / RRG carried out a large-scale study on a specific type of SMFE – community-based forest enterprises (CFEs) operating in tropical countries (Molnar *et al.*, 2007). Specific cases of CFEs operating in Bolivia, Brazil, Cameroon, China, Columbia, Gambia, Guatemala, Honduras, India, Mexico, Nepal, Papua New Guinea, Philippines, and Tanzania were documented and analyzed. In all, case studies of 20 CFEs operating in the tropics were conducted (as well as a larger survey in Mexico), representing varying scales and a variety of goods and services.

The study aimed to characterize these operations and uncover some of the common underlying factors that contribute to the success and/or failure of CFEs. Some of the key findings are that CFEs are becoming increasingly important business structures, especially with mounting recognition of community forest tenure rights. Many CFEs are indeed profitable, providing a wide basket of goods and services to local markets that are often overlooked by the more traditional private sector. However, they also face a great many challenges, not the least of which are internal business constraints, market barriers, and regulatory and policy barriers related to insecure tenure and land use rights. Nonetheless, on the balance, CFEs appear to important agents for the conservation of local-scale biodiversity and show tremendous potential for expansion in tropical countries (Molnar *et al.*, 2007).

Past and Current Data:

Quantitative information on the significance of SMFEs in developing regions does exist, but it is scant and, with one exception, dated. That said, three major study initiatives are noteworthy and are discussed here: Fisseha, 1987; Arnold *et al.*, 1994; and Macqueen and Mayers, *forthcoming*. Descriptions of the studies and key results are presented here, followed by a summary of some of the major findings from all three reports.

In one of the first studies of its kind, Fisseha (1987) used survey data collected in the late 1970s to mid-1980s to enumerate the contributions of forest-based small-scale enterprises (SSEs or SSIs when they refer to industrial operations) in the context of all small-scale enterprises operating in the developing countries of Bangladesh, Egypt, Honduras, Jamaica, Sierra Leone, and Zambia. Here, small-scale enterprises were defined by an upper limit of 50 employees, with the exception of Jamaica at 25 employees. Some of the key findings from this study are summarized in Table 2.

Arnold *et al.* (1994) summarize the results of six separate surveys conducted on the general characteristics and dynamics of SMFEs (employing fewer than 50 individuals) operating in Southern and Eastern Africa. Data specific to the small-scale forest products sector was assembled from six country reports: Botswana (Daniels and Fisseha, 1992); Kenya (Parker and Torres, 1994); Lesotho (Fisseha,

1991); Malawi (Daniels and Ngwira, 1993); Swaziland (Fisseha and McPherson, 1991); and Zimbabwe (McPherson, 1991). Some of the key findings from this report are presented in Table 3.

Table 2: Some key findings on the characteristics and significance of SMFEs based on Fisseha, 1987.

	Bangladesh	Egypt	Honduras	Jamaica	Sierra Leone	Zambia
Number of small-scale industrial forest enterprises as a proportion of total number of small-scale industrial enterprises	20.6%	24.8%	12.6%	37.4%	14.7%	30.9%
Employment in small-scale industrial forest enterprises as a proportion of total employment in small-scale industrial enterprises	13.0%	23.9%	16.3%	34.8%	20.3%	33.2%
Total employment from small-scale industrial forest enterprises	-	-	-	10,200	18,000	137,400
Mean number of employees in small-scale industrial forest enterprises	3.8	1.9	2.2	2.2	1.8	1.7
Total production value in small-scale industrial forest enterprises as a proportion of total production value in small-scale industrial enterprises.	-	19.0%	14.0%	49.0%	27.0%	-
Mean production value in small-scale industrial forest enterprises ($US)	2,362	1,501	2,536	4,979	1,384	-
Mean total investment in small-scale industrial forest enterprises ($US)	255	-	1,055	3,030	431	-
Mean rate of return on investment in small-scale industrial forest enterprises	54.2%	27.5%	41.7%	33.0%	32.2%	-

Table 3: Some key findings on the characteristics and significance of SMFEs based on Arnold *et al.*, 1994.

	Botswana	Kenya	Lesotho	Malawi	Swaziland	Zimbabwe
Number of small-scale forest products enterprises	1,026	127,774	5,561	80,335	17,505	175,004
Number of small-scale forest products enterprises as a proportion of total number of small-scale enterprises	2.0%	14.1%	5.8%	14.1%	35.3%	20.7%
Employment in small-scale forest products enterprises	1,893	350,416	10,420	132,178	30,571	237,136
Employment in small-scale forest products enterprises as a proportion of all small-scale enterprises	2.1%	17.2%	6.7%	13.1%	32.3%	18.5%
Average annual employment growth rate of small-scale forest products enterprises	33.2%	23.3%	5.3%	10.7%	5.5%	4.0%

Macqueen and Mayers (*forthcoming*) have attempted to summarize the findings of the IIED country studies described above, and specifically information related to the significance of SMFEs in Brazil, China, Guyana, India, South Africa, and Uganda. The definitions of SMFEs vary from country to country, but in the context of this study, are meant to be interpreted as forest-based enterprises which employ limited numbers of workers (typically less than 100), are locally owned and managed, rely on financing from ownership, have limited influence over the marketplace, and lack scale efficiencies (Thomas *et al.*, 2003). Key findings from this synthesis report are shown in Table 4.

Table 4: Some key findings on the characteristics and significance of SMFEs based on Macqueen and Mayers, *forthcoming*.

	Brazil	China	Guyana	India	South Africa	Uganda
Number of SMFEs as a proportion of total forest enterprises	98.2-98.9%	87.0%[1]	93.0%[2]	87.0-98.0%	33.0-95.0%	-
Number of SMFE employees as a proportion of total forestry employment	49.5-70.4%	50.0%	75.0%[3]	97.1%[4]	25.0%	60.0%
SMFE revenues as a proportion of total forestry revenues	75.0%	43.0%	50.0%	82.0%[5]	3.0%	60.0%

[1] all forest enterprises
[2] all forest production enterprises
[3] forest harvesting
[4] safety match manufacturing
[5] sawn timber production

Whilst the metrics incorporated in the three studies vary, a very clear trend can be observed from the enumerations seen in Tables 2 through 4 – SMFEs are important instruments of economic activity in many developing forested regions. More resolute data is difficult to come by, and what little exists, lacks consistency in terms of data collection methods and definitions used in defining SMFEs. Nonetheless, they do help to paint a picture of a sector that makes significant economic and employment contributions. For example, in Uganda, it is estimated that there 511,530 SMFEs, with 500,000 of those being in the microenterprise category (Auren and Krassowska, 2003). In India, the vast majority of the country's 23,000 sawmills and 12,000 safety match factories is small-scale (Saigal and Bose, 2003). In China, some 87% of the 14,907 registered forest enterprises are categorized as SMFEs and 90% of the value generated in the furniture sector comes from SMFE activity (Sun and Chen, 2003). An in depth study of the dynamics of the Chinese SMFE sector (Guangping and West, 2004) found a decreasing trend in the employment provided by township level forestry enterprises (from 2.8 million in 1996 to 1.3 million in 2002), while the share of employment attributed to forestry township enterprises increased during the same period (from 20% to 26%).

However, the highest quality data, by far, comes from Brazil and is reported by May *et al.* (2003). This data is summarized in Table 5 and is sourced from the Brazilian Institute of Geography and Statistics government online database, Sistema IBGE de Recuperação Automática – Bases de Dados Agregados (IBGE-SIDRA, 2003). Again, the number of enterprises and employees is significant; in total, forest harvesting, forest processing, intermediate processing, and furniture enterprises with fewer than 100 workers number almost 60,000 and provide employment for over 380,000 individuals (these estimates do not include the informal sector). Moreover, this data provides an example of the information that can be compiled for making a case in favor of SMFEs and pro-poor policies in developing economies. Interested researchers should take heed of the enumerative methods used to collect this data.

Table 5: SMFEs (and employees) as a proportion of total enterprises (and total employees) in the Brazilian Forestry Sector, 2000.

Source: May et al., 2003; IBGE-SIDRA, 2003.

	Enterprise size						
	0 – 4 employees	**5 – 9 employees**	**10 – 29 employees**	**30 – 49 employees**	**50 – 99 employees**	**100 – 499 employees**	**Total number of employees (enterprises)**
Harvesting and primary processing	70.9% (8.1%)	10.2% (5.0%)	11.0% (13.5%)	3.5% (9.8%)	2.6% (13.2%)	1.5% (21.5%)	4,653 (64,571)
Intermediate wood processing	67.9% (12.5%)	13.4% (9.8%)	13.1% (23.0%)	2.7% (11.0%)	1.9% (14.2%)	1.0% (20.6%)	28,069 (255,849)
Furniture manufacture	68.8% (13.8%)	14.3% (10.7%)	11.8% (21.8%)	2.5% (10.7%)	1.6% (12.8%)	1.0% (21.8%)	27,656 (242,574)

Characteristics and Dynamics of SMEs and SMFEs in Developing Regions

Little in the way of research has been conducted specifically on the characteristics and dynamics of SMFEs operating in developing economies, with only two exceptions. However, more generic work on SMEs in these regions has been undertaken and is applicable in the context of small and medium sized forest-based businesses.

SMEs:

Mead and Liedholm (1998) and Liedholm (2002) discuss the dynamics of micro and small enterprises (MSEs). Their findings, based on nation-wide surveys implemented in Botswana, Dominican Republic, Jamaica, Kenya, Lesotho, Malawi, South Africa, Swaziland, and Zimbabwe, are numerous. Between 17% and 27% of the working age populations in the sampled countries were employed by MSEs, roughly twice as many as are employed by large-scale formal businesses. The vast majority of these enterprises were very small, informal, and rurally-based, employing only one person. Even the slightly larger enterprises employing 10 to 50 workers comprised only 2% of the sample (Mead and Liedholm, 1998; Liedholm, 2002).

This finding is supported by Rauch (1991) and Tybout (2000), who assert that the preponderance of very small enterprises can be explained by the fact that small enterprises may wish to stay small and informal as a means of avoiding taxation and enforcement. Thus, most employment in developing economies is found on either end of the firm-size distribution – either large firms or very small enterprises – leading to the so-called 'missing middle' phenomenon. Biggs and Shah (2006) find the same bimodal distribution in Sub-Saharan Africa, which encompasses a few large enterprises (employing more than 200 individuals), many small enterprises, and a relatively empty middle. Firms in the latter two groups "operate under conditions of considerable uncertainty" for a number of reasons: (1) technical and management skills tend to be low; (2) employee absenteeism and pilfering tend to be high; (3) firms have limited access to credit and insurance; (4) market engagement is hampered by "weak public institutions of property rights and contract, poor governance, and poor infrastructure services" and consequently higher transaction costs; (5) firms lack assets; (6) worker skill levels and product quality are uneven; (7) there is a scarcity of raw material suppliers and poorly developed supply chain infrastructures; (8) laws and procedures are antiquated and rife with corruption and "formal contract enforcement mechanisms" are generally not used; and (9) firms are more prone to economic shocks in the forms of "weather-related distress in agriculture, civil strife, terms-of-trade shocks, frequent policy changes and poor policy management, corruption, infrastructure breakdowns, and so on" (Biggs and Shah, 2006). Interestingly, despite these challenges, Tybout (2000) finds that small firms operating in developing regions are not necessarily scale inefficient compared to larger firms and that there is no evidence to suggest that the forgone efficiencies of being small encumber these enterprises in any way. Similarly, Biggs (2002) was unable to uncover any differences between large and small enterprises with respect to innovation, job creation, quality of employment, or environmental impact.

According to Mead and Liedholm (1998) and Liedholm (2002), the workers in MSEs are generally either working proprietors or unpaid family members, supporting Mayers' (2006) claim that 80% of the financing for SMFEs comes from owners, families, and friends and Fisseha's (1987) assertion that 80% of the expansion capital for SMFEs comes from reinvested profits and personal savings. For the most part, the women working in these enterprises outnumbered the men. In this regard, the unfortunate reality is that some SMEs have horrible labor conditions and discriminate on the basis of gender (Macqueen, *undated*), and development agencies and NGOs involved in interventions and policy reform must be acutely aware of these issues. Most MSEs were engaged in commerce or trading, but manufacturing – particularly, textiles and clothing, food and beverages, and wood and forest products – was not uncommon. Market engagement tended to be domestically-based, with the vast majority of MSEs selling directly to end users in local markets (Mead and Liedholm, 1998; Liedholm, 2002).

Mead and Liedholm (1998) and Liedholm (2002) also collected and analyzed information on the dynamics of these MSEs in developing regions, and specifically, the rates at which they start-up, expand, and close, as well as the factors that might explain these patterns. New jobs in developing regions come from two sources, new enterprises and enterprise growth, but according to the authors, the rate at which this occurs is intrinsically tied to the state of the economies in each respective country and the various macroeconomic factors at play. However, when the economy is buoyant, most new jobs come from expansion of existing facilities. Based on the findings of Biggs (2002), Macqueen (*undated*) concurs with the assertion that SMEs thrive in growing economies, but states that "this is believed to be symptom of growth, rather than driving it".

Mead and Liedholm (1998) and Liedholm (2002) estimated the average rates of MSE starts to be approximately 20% across all sampled countries. However, the average rates of MSE closures exceeded 20%, indicating a highly transitory environment, a slight net contraction (although not in all regions), and no shortage of risk-taking entrepreneurs. The key determinants in the survival of a MSE were posited to be its age, its past growth patterns, its initial size, its sector, and its location. Similarly, the determinants of MSE expansion or growth were also explored using regression analysis techniques. Age and MSE size were found to be negatively correlated with expansion; in other words, smaller and younger enterprises experienced higher rates of growth. Enterprises engaged in manufacturing and services were more likely to expand compared to those engaged in commerce or trading. MSEs located in urban settings are more likely to grow compared to their rural counterparts, and some countries outperformed others (a result that is generally tied to the economic well-being of the country in question). There also appears to be an employee effect, with male-run enterprises slightly outperforming female-run enterprises (likely due to the fact that females generally have to balance more domestic responsibilities), and workers with some vocational and/or post-secondary training having the ability to grow enterprises at higher rates than workers without (Mead and Liedholm, 1998; Liedholm, 2002). Using similar techniques, Biggs and Shah (2006) reinforce these results, but add that small firms with collateral in the form of assets and ready access to formal finance mechanisms grow at faster rates than firms without. In addition, enterprises that are 'plugged into' a formal or informal support network (see section on *SMFE Networks, Clusters, and Associations*) tend to expand at higher rates, as well (Biggs and Shah, 2006).

SMFEs:

From a forestry perspective, only Fisseha (1987) and Arnold *et al.* (1994) have attempted to understand some of the characteristics and dynamics of the SMFE sector exclusively. Unfortunately, given the ephemeral nature of the SMFEs in the developing world, some of the findings must be viewed with a degree of caution as they are out of date.

Fisseha (1987) finds that there are some characteristics which uniquely define small-scale forest-based enterprises in developing regions around the world, namely: (1) their simplicity with respect to organizational structure and operations; (2) their tendency to be rurally-based; (3) a general lack of capital, investments, and assets and extremely limited access to financing; (4) their accessibility to the poor, landless, and women; and (5) their dependence on family members in the day-to-day operations of the enterprise. Between 60–65% of the sampled enterprises were owner-operated and the vast majority were home-based operations, operating in or in very near proximity to the homestead. A very limited proportion of SMFEs (less than 1%) owned powered machinery of any kind. Women are employed in SMFEs, but are not the majority and tend to be more engaged in "non-wood" forest activities (Fisseha, 1987).

Fisseha (1987) also lists some of the major constraints and barriers that SMFEs operating in developing regions face. First, raw material supplies – especially wood – are often times difficult to source, either due to inaccessibility, unavailability, or high and unstable pricing. Financing requirements for start-up, expansion, and ongoing working capital are generally small, but difficult to come by and many SMFEs reported a serious lack of funds. This is especially the case for working capital, which fluctuates depending on demand, seasonality of production, and fluctuating prices (credit is oftentimes used to meet these shortfalls). SMFEs also tend to lack marketing plans and promotional strategies, meaning that the potential of local markets is generally not fully exploited. Finally, there seems to be a lack of managerial and entrepreneurial skills within SMFEs, which is seen to be a significant factor constraining enterprise growth. The findings suggest that managers of SMFEs have many responsibilities competing for their time and that even simple business practices, like record keeping, tend to fall by the wayside (Fisseha, 1987).

Lastly, this study confirms that SMFEs are effective job-creating mechanisms, especially under favorable economic conditions, when new entrants are attracted to the opportunities that SMFEs can provide. Even when the economy slumps, SMFEs play an important role with respect to providing employment for displaced workers that were previously employed by larger firms (Fisseha, 1987).

In a more recent work, Arnold *et al.* (1994) attempt to characterize the main features of SMFEs operating in Southern and Eastern Africa. Many of the results echo Fisseha's (1987) work. For instance, the findings suggest that most SMFEs were home-based operations, with the proprietor or family members making important contributions to the workforce. SMFEs employed an average of 1.87 workers per enterprise in the regions of study, with two-thirds being single person enterprises (only 1% of the sampled enterprises employed more than 10 workers). Interestingly, the study found a gender dichotomy; while the majority of non-wood enterprises (grass, cane, bamboo) were owned by or women (more than 70%), men dominated the workforce and ownership (more than 90%) of woodworking enterprises (Arnold *et al.*, 1994).

Arnold *et al.* (1994) also found that approximately 80% of the existing jobs in non-wood SMFEs came from start-up enterprises, while 55% of the existing jobs in woodworking enterprises came from expansion and growth (generally regarded to be a more 'secure' form of employment). In aggregate, the net number of new SMFEs was on the rise in Southern and Eastern Africa during the period of study, but closures were still common for a variety of reasons, the two most common being generally bad business conditions and personal reasons. Very few of the SMFEs in the sampled regions grew at all, but the average growth for those that did was estimated to be 11.5% per year, with the woodworking subsector having the highest rate of growth at 31%. Like previous studies, some of the determinants of expansion for SMFEs include: (1) age (younger enterprises stand a better chance of growing); (2) size (smaller firms stand a better chance of growing); (3) location (enterprises located in commercial districts stand a better chance of growing); and (4) gender (male-headed enterprises stand a better chance of growing) (Arnold *et al.*, 1994).

Finally, Arnold *et al.* (1994) state that, while woodworking enterprises perhaps offer the greatest potential for growth in Southern and Eastern Africa, the grass, cane, and bamboo subsector still employs the largest number of people and cannot be ignored. All that said, SMFEs face unique constraints that other SMEs in the region do not. Notably, access to raw material supplies is a challenge for SMFEs, especially those engaged in woodworking. The main reasons for this include forestry and trade practices which make it difficult for small enterprises to compete and procure raw materials, as well as limited access to working capital to maintain adequate inventories. In addition, it is becoming increasingly difficult for SMFEs to gain traction and expand due a lack of credit facilities, infrastructures to develop business skills, and assistance in new market development (Arnold *et al.*, 1994).

Forest Products, Services, and Markets for SMFEs

While it is of some value to report on metrics and factors related to the significance, characteristics, and dynamics of SMFEs in developing economies, it is perhaps more germane to discuss the appropriate market opportunities for enterprises of this scale. From a business point of view, it almost goes without saying that product and service offerings of SMFEs must match their organizational goals, production capabilities, and business structures. Findings from the recent UK Tropical Forest Forum on Small Enterprise Development and Forests (UKTFF, 2006) suggest that the most viable value propositions for SMFEs are those "with good long-term prospects", offering up the example of timber-based woodworking where "markets expand with increasing incomes". However, the forest sector is incredibly diverse, spanning a wide range of economically viable products and services and almost innumerable target markets. Given this breadth of opportunities, the questions are, which of these products and services are most appropriate for SMFEs in developing regions and what markets should they serve?

Markets:

The latter question on markets is easier to address in so much as the scale of SMFEs precludes many of them from participating in highly competitive, price sensitive, commodity-oriented export markets. This is not necessarily a bad thing; the importance of domestic markets cannot be overstated and there are many business advantages to be gained by specializing in domestic markets. Poschen (2001)

summarizes these by stating that, for SMFEs, "proximity to the customer can enable them to turn the apparent disadvantage of their small size and ties to a locality into positive assets, through customizing, just-in-time delivery and after-sales service."

In most developing regions, the lion's share of production (more than 95%) is destined for domestic markets in the form of fuelwood and charcoal, industrial roundwood, and pulp and paper products (Scherr *et al.*, 2003). This trend is expected to continue as domestic producers find competitive advantage in lower transportation costs and higher degrees of supply flexibility (Scherr *et al.*, 2003). Notably, wood consumption in countries like China, India, and Brazil – already sizeable – is expected to grow significantly as construction markets expand (Macqueen and Mayers, *forthcoming*). In addition, it has been predicted that three-quarters of Africa's energy needs will be from fuelwood, most of it sold domestically (Macqueen and Mayers, *forthcoming*).

Products and Services:

The question of which products and services make the most sense for SMFEs is a thornier issue to tackle because of the multifaceted opportunities that forests provide and the variation that exists both in enterprise structures and in forested landscapes of varying scales and contexts. In Fisseha's (1987) study of SMFEs in six developing countries, the two most commonly manufactured categories of goods produced were: (1) baskets / mats / hats; and (2) carpentry / furniture. These were distantly followed by: (3) wood carvings / bamboo and cane products; (4) sawmilling / pitsawing products; and (5) other wood products. Arnold *et al.* (1994) categorize the products manufactured by SMFEs in six African countries into four broad categories: (1) grass, cane, and bamboo products, accounting for 50% of the sampled enterprises and 42% of the employment; (2) woodworking products, accounting for 17% of the sampled enterprises and 27% of the employment; (3) other forest products, accounting for 13% of the sampled enterprises and 11% of the employment; and (4) forest products trade (mostly fuelwood from Kenya), accounting for 20% of the sampled enterprises and 20% of the employment. Lastly, a wide range of products and services are included in the FAO case studies, the Forest Trends / RRG community-based forest enterprises report, and the IIED country studies (see section on *Country Level Information and Data* for references). Some of the most commonly recurring groups of products and services include: (1) artisan goods, woodcarving, and crafts; (2) bamboo, fiber, and rattan products; (3) commodity wood products (logs, timber, lumber, wood-based panels, paper); (4) ecosystem services (biodiversity conservation, carbon sequestration, tourism, ecotourism, wildlife); (5) forest operations (plantations, harvesting, contracting, transportation); (6) fuelwood and charcoal; (7) NTFPs (fruits and foodstuffs, medicinals, oils and resins); and (8) processed wood products (furniture, carpentry, joinery, other woodworking).

While this sort of exercise presents an interesting overview of the potential opportunities that are available, it is little more than a shopping list and does not really shed much light on the specific types of products and services that forest dependent communities could provide in an economically viable manner. These sorts of decisions depend on a variety of factors, not the least of which are customer demand, policy constraints, environmental issues, conservation goals, and the capacities of the SMFEs themselves. To that end, FAO has developed the Market Development & Analysis framework to identify appropriate market opportunities for SMFEs operating in developing economies and facilitate their successful entry into the marketplace (Lecup and Nicholson, 2000). Book D of the MA&D series is devoted to identifying "products, markets, and means of marketing". The framework stresses participatory decision making and the collection of community-level, national, and international data on markets and the economy, resource management and environmental issues, social and institutional factors, and science and technology (Lecup and Nicholson, 2000). In a sense, this is no different from marketing research as we know it; the underlying notion here is that appropriate decisions on product and service offerings are informed ones.

Scherr *et al.* (2002) and Scherr *et al.* (2003) propose a more specific framework outlining product opportunities for low-income producers (generally small-scale) and forest communities. These include, but are not limited to: (1) limited volumes of commodity-grade wood products like construction-grade

lumber, poles, and fuelwood destined for local markets; (2) highly valued appearance grade woods (tropical hardwoods) for use in secondary manufacturing either domestically or in foreign markets; (3) certified wood products; (4) processed wood products like furniture, flooring, moldings, and millwork primarily for domestic markets; (5) industrial pulpwood; (6) payments for ecosystem services like carbon sequestration, watershed protection, and biodiversity conservation; and (7) non-timber forest products (a wide range of biological goods including medicines, fruits, nuts and other foodstuffs, bamboo and rattan, oils and resins, mosses and lichens, roots, mushrooms, and so on).

On this latter point, NTFPs present a very interesting opportunity for SMFEs, very often times as a principal value proposition. According to Belcher *et al.* (2005), interest in NTFPs as commercially marketable goods paralleled the increased awareness of and attention to environmental issues, sustainable development, and poverty that occurred during the late 1980s–early 1990s. FAO (2005b) recently estimated the import value of some 34 different NTFPs to be $US 7 billion, yet over 90% of the NTFP trade takes place domestically; a trend that is continuing unabated especially in developing regions (Macqueen and Mayers, *forthcoming*). Simple extrapolation of these results confirms that NTFPs have come of age and are indeed 'big business'. While many options and alternatives exist for the extraction of NTFPs, Belcher *et al.* (2005) argue that it is not a straightforward approach for improving the livelihoods of the rural poor and that successful commercialization must be integrated with other economic activities which are difficult to initiate in many developing countries. That said, opportunities increasingly exist for both the cultivation of NTFPs (Macqueen and Mayers, forthcoming), as well as for NTFPs that cannot be grown in large plantations (Scherr *et al.* 2002).

SMFE Networks, Clusters, and Associations

SMFEs in developing economies do not operate in isolation. Furthermore, the success of many SMFEs is very much contingent upon the degree to which they can overcome issues of scale, economic instability, market imperfections, and a scarcity of institutions which protect contractual and property rights. To address these issues, the aggregation of SMEs into networks, clusters, and associations has been a commonly recommended strategy.

Networks:

Biggs and Shah (2006) find that many SMEs operating in Sub-Saharan Africa tackle some of these obstacles by embedding themselves in 'networks' – private institutional support systems, developing long-term business relationships along the supply chain, nurturing long-term contractual arrangements, fostering strategic business alliances with larger enterprises, or engaging in cooperative efforts like business networks, producer associations, and clusters. Such practices allow for scale efficiencies to be more readily gained (*e.g.*, through buyer or seller groups), and can provide other advantages such as lower search, screening, and referral costs, higher degrees of information sharing, greater access to supplier credit, and an business environment with less uncertainty and risk. In particular, business networks – which tend to consist of ethnically-based minority groups operating small-scale industrial enterprises (including in the wood furniture subsector) – are becoming increasingly common and have been found to be effective mechanisms for overcoming institutional and market failures and for improving the overall productivity and performance of SMEs in Sub-Saharan Africa. However, the downside is that the large numbers of non-member or 'outsider' enterprises are generally excluded – perhaps for reasons of ethnicity – from accruing the benefits of such arrangements (Biggs and Shah, 2006).

Clusters:

The notions of industrial 'districts' and 'clusters' have recently gained a great deal of attention as strategies that SMEs can adopt to overcome issues of scale and to improve their performance, competitiveness, and ability to provide goods and services that would otherwise be beyond their reach. Poschen (2001) notes that many industrial districts have long been in existence (*e.g.*, the Italian furniture making districts) and have decisively shown that small, specialized firms can take advantage of the synergies, informal networks, and cooperation that geographical proximity can provide. Industrial

clusters are a similar concept, but refer more generally to a collection of related enterprises within an industry sector that may provide raw material supplies, manufacturing, equipment supplies, education, and related services. The advantages inherent in such forestry-based clusters have been well documented in many European nations like Finland, Germany, and Austria (Hazely, 2000), and are becoming increasingly frequent in the developing economies of Malaysia and Brazil (Poschen, 2000).

Associations:

Based on research out of Brazil (Figueiredo *et al.*, 2006), China (Weyerhaeuser *et al.*, 2006), Guyana (Ousman *et al.*, 2006), India (Bose *et al.*, 2006), South Africa (Bukula and Memani, 2006), and Uganda (Kazoora *et al.*, 2006), Macqueen (2004) and Macqueen *et al.* (2006a) put forth a view of business 'associations' as a viable strategy for SMFEs to overcome issues related to their small-scale nature. Macqueen (2007) states that SMFEs operating in developing regions require structure with respect to production, aggregation, marketing, and intelligence in order to gain market access and successfully compete in the marketplace. Associations can provide such structure and, in this context, are broadly defined as "any formal or informal grouping of small and medium enterprise at the firm level with an articulated common purpose", and can take the form of clusters, other collective action, or enterprise associations (Macqueen, 2004). The latter refers to a wide range of business arrangements – subcontracting, partnerships, strategic alliances, and so on – that emerge with the common aim of achieving "collective efficiencies" (Macqueen, 2004). While in some instances, the common aims for these enterprises may simply revolve around survival, the formation of such associations may also be more proactively related to reducing transaction costs through scale-efficiencies and less convoluted supply chains, adapting to new market opportunities, and shaping the policy environment through increased capacity (Macqueen *et al.*, 2006a). In addition, there is evidence to suggest that business associations can help to reduce poverty and promote environmental sustainability by directly taking an advocacy role on issues related to insecurity and powerlessness, inequitable social relationships, drudgery, lack of identity, lack of clarity on land ownership and tenure, and unfavorable investment and market conditions (Macqueen, 2004).

The Potential for Aggregation:

From the point of view of interventions and policy reforms, questions revolve around whether such networks, clusters, associations, and other similar institutional arrangements can be induced in developing regions. While opinion on this topic is mixed, there is some evidence to suggest that perhaps they can, at least in some parts of the world (Poschen, 2000). However, Liedholm (2002) unequivocally states that no such advantages have been observed among SMEs operating in Africa and Latin America, perhaps owing to a lack of trust between these largely independent enterprises (Parker, 1994). Even subcontracting arrangements and other market-based linkages (with other enterprises, or larger enterprises) are relatively uncommon in Africa and Latin America, although there are signs that this is beginning to change (Grierson *et al.*, 1997; Liedholm, 2002). On this point, Macqueen *et al.* (2006a) make a very important distinction and argue that "forest-based associations can and do work in places where there is little else available to improve the livelihoods of the poor." In such cases, the appropriate policy instruments may include direct subsidies and/or an easement on the requirements to register as an association. Whatever point of view one takes on this topic, one thing is very clear – there is a salient need to further investigate the impacts that business networks, clusters, and associations have on poverty reduction and environmental impact in developing regions (Macqueen, *undated*).

Approaches to Supporting SMFEs in the Developing World

Providing support for SMFEs, and SMEs more generally, has long been upheld by governments, development agencies, and NGOs as an appropriate strategy to catalyze economic development and reduce poverty in developing regions. Between 1998 and 2002, the World Bank Group alone approved over $US10 billion to support pro-SME programs (Beck and Demirgüç-Kunt, 2004; Beck *et al.*, 2004). By creating enabling environments which encourage entrepreneurship, legitimize businesses, and allow free and open competition, proponents of such strategies argue that the continued existence of SMEs in

developing regions provides myriad economic and social benefits, especially in poorer communities (Beck and Demirgüç-Kunt, 2004; Beck *et al.*, 2004; Macqueen, *undated*; Scherr *et al.*, 2004). In this regard, SMEs are thought to be effective poverty reduction tools, in so much as they tend to be more labor-intensive and better sources of newly created jobs than larger firms, thus providing higher levels of employment (Beck and Demirgüç-Kunt, 2004; Beck *et al.*, 2004). This has been a commonly held point of view since as early as the 1970s, when traditional large-scale forestry practices began to be called into question for a number of socially and environmentally-related reasons (Macqueen and Mayers, *forthcoming*; Scherr *et al.*, 2003). However, while community forestry initiatives were upheld as the panacea to more industrial forestry approaches, the SMFEs which dominate production in developing regions have tended to be largely ignored (Macqueen and Mayers, *forthcoming*).

On the other hand, some skeptics have asserted that larger firms are better suited than SMEs to provide stable and high quality employment in developing regions because of their market reach, economies of scale, and their ability to conduct ongoing research and development (Beck and Demirgüç-Kunt, 2004; Beck *et al.*, 2004). Others point out that there is no empirical evidence to suggest that SMEs are more labor intensive than larger firms and question the view that firm size is "an exogenous determinant of economic growth" (Beck and Demirgüç-Kunt, 2004). Instead, they cite the importance of competitive variables related to the business environment as factors which all firms, large or small, must contend with, including "low exit and entry barriers, well-defined property rights, effective contract enforcement, and access to finance" (Beck and Demirgüç-Kunt, 2004). Macqueen (*undated*) states that the geographical breadth and diversity of SMEs in developing regions makes engagement and support difficult due to the large transaction costs inherent in such initiatives and the inability to prescribe blanket policies for a wide range of highly variable producers. Furthermore, support of some SMEs may be ill advised because of discriminatory policies, substandard working conditions, poor environmental track records, or a lack of formality (Macqueen, *undated*).

Whether one takes a skeptical or an advocatory view, it is generally accepted that the fostering and promotion of SMFEs can be an effective strategy to combat poverty and improve the livelihoods of the rural poor living in or adjacent to the forest dependent communities of the developing world. So what are the right approaches for supporting SMFEs in developing regions? On one hand, there is a need for shorter term solutions in the form of direct interventions and financing which would serve to catalyze and legitimize the SMFE sector. On the other hand, longer-term solutions in the form of policy reforms are required to create enabling environments which allow SMFEs to legally exist, compete fairly, and ultimately, thrive.

Whichever route is followed, it is worth noting that governments, civil society, and industry must work together to forge solutions which serve to reduce poverty (Donovan *et al., 2006*; Macqueen and Mayers, *forthcoming*). In particular, there is a pressing need for organizations – NGOs, government agencies, development agencies, and business consultants – to provide technical, business, and financial services (Donovan *et al.*, *undated*). Finally, Macqueen (*undated*) states two important caveats where interventions and policy reforms regarding SMFEs are concerned. First, interventions must be aimed at creating supportive environments which require "a flexible and incremental approach across all governance measures – not limited to one-off incentives". Second, given the complexity and multifaceted nature of the problem at hand, a recommended strategy for fostering SMFEs in developing regions is simply to try various approaches; some may work, others may not, but each provides an opportunity to learn.

Direct Intervention and Financing:

It has been posited that the existence of a vibrant SME sector provides a firm foundation for future industrial growth in developing regions and results in the emergence of more competitive, entrepreneurial, dynamic, and flexible industrial infrastructures (Biggs, 2000). Some have speculated that SMEs are more susceptible to market and institutional failures than larger enterprises. Addressing these failures – *e.g.*, high transaction costs, limited access to certain markets, an inability to exploit economic opportunities – provides justification for the direct support of SMEs in developing regions

through interventions and financing (Beck and Demirgüç-Kunt, 2004; Beck *et al.*, 2004; Biggs, 2002; Macqueen, *undated*).

Interestingly, there seems to be general agreement on the role of direct financing. In particular, the efficacy of subsidies to catalyze SMEs in developing economies has recently been called into question in favor of policies which serve instead to create an enabling environment for SMEs to form and flourish. As Beck and Demirgüç-Kunt (2004) state, "rather than directly subsidizing SMEs and aiming for a large number of small enterprises, policymakers should focus on creating a business environment that allows easy entry and exit for firms and assures entrepreneurs and financiers that property rights and contracts will be enforced." Biggs (2002) and Hallberg (2000) echo this sentiment by stating that SME interventions in developing economies should fundamentally be private development strategies. However, Biggs (2000) goes on to argue that there are four circumstances which warrant some degree of subsidization: (1) to stimulate the formation of SMEs in instances where policy-imposed distortions have reduced their numbers; (2) to address market failures that are particular to smaller firms, like information and enforcement problems related to financing; (3) to assist in the development of institutional structures which benefit SMEs, such as associations; and (4) to improve the learning environments and mechanisms within firms so that they can be better informed on decisions related to improvements to strategies, structures, and technical capabilities. All that said, Biggs (2002) also forewarns that subsidies must "go to projects that promote 'additionality' rather than funding something that SMEs would have done anyway."

Policy Reforms:

Scherr *et al.* (2003) argue that long term and viable solutions in the form of policy reforms must be sustainable, economically viable, and market-based. In fact, past attempts have largely been ineffective because their focus was on access to raw materials, as opposed to market-related issues and other market-based mechanisms (Angelsen and Wunder, 2003; Donovan *et al.*, *undated*; Scherr *et al.*, 2003). Poschen (2001) recommends that policy initiatives should attempt to build on the synergies (or clusters) that may already exist in these regions and that projects must aim to improve information and communication flows, facilitate access to credit and capital, and ensure that the resultant employment that is created is decent. Mead and Liedholm (1998) agree that policy reforms are an effective means of catalyzing growth and employment of micro and small enterprises operating in developing countries, but forewarn that policy changes must take the heterogeneous nature of these businesses into account. For example, many very small, informal microenterprises operate primarily in a survival mode. Support for these types of enterprises – generally in the form of easier access to working capital and to credit – would greatly assist in "helping to make a large number of very poor people a little less poor." Other targets for policy reforms are the slightly larger enterprises that are in the midst of expansion. Here, support, in the forms of securing raw materials supplies and locating viable market opportunities, is much needed. In either case, a prudent strategy for developing countries would be to focus on specific sectors of the economy – *e.g.*, forest-based goods and services – which show potential for growth (Mead and Liedholm, 1998).

In terms of small forest-based enterprises, Donovan *et al.* (*undated*) and Donovan *et al.* (2006) summarize the many policy recommendations from the 2006 International Conference on Small and Medium Enterprise Development for Poverty Reduction: Opportunities and Challenges in Globalizing Markets (CATIE/FAO, 2006). Among their are recommendations are for NGOs, governments, and international organizations to provide policy support for SMFEs in the forms of: (1) business development and supply chain services; (2) training and assisting SMFEs in articulating their technical, business, and financial needs; (3) the promotion of market-based approaches and cost/benefit sharing; (4) increasing access to credit; (5) implementing measures to reduce transaction costs; (6) creating an enabling environment for SMFEs to flourish (including clear tenure and access rights and simpler business procedures); (7) facilitating information and communication flows along supply chains; (8) promoting increased cooperation and multistakeholder processes; and (9) promoting associations and networks of SMFEs.

Providing Support – A Social and Environmental Perspective:

In the context of forestry, and the broader context of sustainable development, policy reforms and interventions which aim to improve the business environment for SMFEs make a good deal of sense beyond just economic development. Macqueen (*undated*) observes that they can "play a unique part in reducing certain elements of poverty such as: insecurity and powerlessness, social inequity, mass production drudgery, ecological or landscape uniformity and a loss of cultural identity." Furthermore, there are important social benefits to be gained, including the ability to provide flexibility for women with domestic and childcare responsibilities, the provision of goods to local markets, and the potential to build 'community' (Macqueen, *undated*). However, it is perhaps the ecological dimension that provides the most salient justification for the continued promotion of SMFEs in developing countries. Forest ecosystems play a vital role not only in the health and well-being of the communities that depend upon them, but on the entire planet. As such, environmental factors should weigh in as heavily as social and economic dimensions when devising interventions and policy reforms related to SMFEs. Macqueen (*undated*) proposes a framework which outlines some the environmental advantages associated with SMFEs (along with economic and social dimensions). These include: (1) negative environmental problems being more local and easier to spot and deal with; (2) environmental resilience and increased space for biodiversity that comes from multiple uses of forests by a diversity of enterprises; (3) shorter hauling distances associated with localized markets; and (4) vested interests in conserving forests as a result of local ties and increased options for use. In the absence of secure tenure rights, voluntary mechanisms, such as forest certification and fair trade timber, offer a promising means of ensuring environmental protection and providing equitable social benefits; however, further work is required to better understand the dynamics of such mechanisms in forest dependent communities (Macqueen *et al.*, 2006b).

Research Needs for SMFEs in the Developing World

In addition to direct interventions and policy reforms, there is a pressing need to conduct further research on the characteristics, scope, and dynamics of SMFEs in developing economies, with a focus on viable market opportunities and their efficacy as poverty reduction tools.

It is worth reiterating the call to action by Angelsen and Wunder (2003) on research related to the pro-poor role of forests, and more specifically, how small-scale forest enterprises can help to reduce poverty in developing countries. According to these authors, SMFEs have shown that, over time, they can provide significant employment opportunities to the rural poor, yet it is difficult for these sorts of enterprises to gain any traction and grow, oftentimes because of well-intended but inapt interventions. While some important research has been conducted on SMFEs in the developing world, especially Africa, additional studies are required to better enumerate their potential impacts on employment creation in various parts of the world. To date, "[this] approach is generally under-represented in the forest product literature", and "a major recommendation would be to link future research to the work on small scale rural enterprises" (Angelsen and Wunder, 2003). Donovan *et al.* (*undated*) and Donovan *et al.* (2006) echo this sentiment by stating that government and international development agencies need to "support research for increased understanding of successful cases and sound practices of SMFE development, the underlying critical success factors, and the potential for scaling up."

With very few exceptions, there is a dearth of data related to SMFEs in developing countries. Mostly, this is simply due to a lack of data collection on the part of government agencies, but is also confounded by the presence of a pervasive informal economy operating in these regions (Macqueen and Mayers, *forthcoming*). The literature that exists on SMFEs is rife with fairly sweeping statements about their role in poverty reduction, employment creation, and economic growth. Unfortunately, very few of these assertions, and the assumptions underlying them, have been empirically substantiated. In order to put SMFEs forward as a viable business alternative to traditional industrial forestry practices, it is of utmost importance to quantify the importance of this sector.

Methodologies:

Methodologically, a two-pronged approach is recommended for deepening our understanding of the characteristics and poverty reduction potential of SMFEs in developing regions: (1) case studies; and (2) surveys. Each is discussed in turn; however, the interested reader is cautioned that the first logical step in attempting to enumerate the importance of SMFEs in developing countries is to investigate whether this information is being collected by the government statistical agencies in the regions of interest. That said, our experience has been that high resolution data of this sort is typically neither collected nor available.

In order to begin to address the many information gaps pertaining to SMFEs operating in developing economies and the viability of SMFEs as alternatives to traditional large-scale industrial forestry practices, it is recommended that a series of business case studies be conducted. While some case study work has been conducted in this context, the purpose of these studies would not be showcase certain SMFEs, but rather to provide detailed and rigorous analyses on SMFEs, with a focus on uncovering the factors that contribute to their success and/or failure. Yin (1994) recommends that this sort of analysis follow a multiple case design approach with embedded (multiple) units of analysis (variables) and a case protocol which contains a set of well developed semi-structured interview questions. For each case, every attempt should be made to collect as much information as possible including business documentation, archival records, direct observation, interviews, photographs, tape recordings, and personal observations, all of which can feed directly into the case analyses by means of commonly practiced triangulation methods (Yin, 1994).

Kozak and Canby (2007) recommend that a good place to start would be with the value propositions that show the highest potential for SMFEs. In other words, cases must be built around sound business principles and realistic market opportunities. For example, it is simply not realistic to expect that a small-forest based enterprise can compete in global markets with commodity goods like logs and lumber, but smaller, localized domestic niches are certainly not out of reach, and thus, warrant further attention. Kozak and Canby (2007) also recommend that cases ought not to occur in isolation, but rather, should be situated within broader macroeconomic contexts which frame the political economies within which the enterprises under study operate. Every country will have fundamental differences in their institutions, business and investment climates, infrastructures, natural ecosystems, and so on. An understanding of the broader macroeconomic contexts is essential to understanding the dynamics at play for SMFEs, especially with respect to economic, political, and institutional hurdles (*e.g.*, market barriers, bribery, transaction costs, access to credit, sustainability issues, and lack of tenure rights). As such, as series of country-level reports which go hand-in-hand with SMFE cases is strongly recommended. Failure to do so would only serve to weaken the argument that SMFEs are effective pro-poor instruments of change, and perhaps even render many of these cases unusable (Kozak and Canby, 2007).

Lastly, it must be noted that case studies couched in terms of seeking out viable businesses alternatives are susceptible to one very real drawback – perhaps the most appropriate business models for SMFEs are not particularly widespread in developing regions, in which case it is difficult to conduct case studies which spin positive stories. That said, there is much to be learned from studying a variety of SMFEs – successes and failures – as knowledge of both will only better inform relevant stakeholders on the appropriateness of various actions, policy reforms, and interventions related to catalyzing SMFE growth.

While there is a great deal of value in conducting case studies as a means of uncovering various business characteristics, constraints, and opportunities for SMFEs, they do little to quantify the magnitude of the sector, and in particular, the dynamic contributions that they make to employment and economic well-being in developing countries. For this, enumerative methods like surveys are required. In the context of SMEs in developing countries, Liedholm (1991) suggests the use of two survey techniques: (1) one-shot business surveys; and (2) multiple-visit or cost-route surveys. It is notable that both use sampling techniques to collect data and inferential methods to draw conclusions. In other words, neither are business censuses; these would fall within the domain of government activities, but admittedly would be difficult, costly, and time-consuming to carry out given the magnitude of the sector.

According to Liedholm (1991), historically, most of the survey work on SMEs in developing regions has used the one-shot business survey method of collecting data at one point in time, either using mail questionnaires or personal interviews. The multiple-visit method, in which firms are repeatedly interviewed over a span of time, are less widespread. However, they have been successfully utilized in farm management and productions studies, and thus, likely have applications in forestry-related enterprises, where seasonality is a common feature. The choice between the two depends on a variety of factors, and has implications on both sampling error and nonsampling bias (this is beyond the scope of this text). In the final analysis though, one-shot business surveys are recommended if the only requirement is for 'stock-type' data which provides "an idea of the extent and composition of small-scale activity in a country" at a given time. On the other hand, multiple-visit surveys are better suited to situations which require 'annual-flow' data collected over a period of time, the logic here being that given the variable nature of SME production, multiple contacts facilitate recall and improve the overall accuracy of the information collected. Obviously, the latter method is more costly, and the frequency with which multiple-visit surveys can be carried out will depend on budgetary constraints. With that in mind, it should be noted that proprietors have been shown to provide fairly decent estimates on inputs, outputs, sales, and labor on a weekly basis, beyond which accuracy begins to taper off (Liedholm, 1991).

Regions:

It is simply untenable to collect information on the characteristics and potential of SMFEs in all developing regions. Governments, civil society, NGOs, international development agencies, and other interested parties must prioritize. This is no simple task; however, Appendix A is a preliminary attempt at developing an inventory of countries where interventions, policy reforms, and research related to SMFEs would seem to make the most sense.

Appendix A is a listing of all the developing countries of the world with greater than 1,000,000 hectares of forested area. Thus, these countries have the highest ecological potential to support small forest-based enterprises. Where the data could be gathered, the table also contains information on each country's income level, official definition of SMEs, estimated numbers of SMEs, and relative contributions of SMEs and the informal sector to employment and GDPs. Finally, the last two columns include assessments of the quality of data on SMFEs that exists for each country, as well as their potential to support SMFEs.

Readers interested in engaging in further work on trying to characterize and/or support SMFEs in developing economies are directed to the last column. However, caution must be observed in reading these results – this is very much a qualitative assessment conducted by the author based on the relative income levels of each country, the relative sizes of their forests, their conduciveness to support SMEs in general, and the quality of data that currently exists. That said, it is clear from Appendix A that there is a great deal of potential for further work on SMFEs as poverty reduction instruments in Asia, Africa, and South America.

V. Concluding Remarks

The world of forestry is complex and multifaceted, comprising numerous business structures and spanning both the formal and informal sectors of the economy. Forest-based enterprises serve ever-widening groups of customers and end-users with a vast array of forest-based products and services and are significant contributors to employment and economic well-being around the world. As such, they are seen to be important elements of strategies aimed at pro-poor economic growth in developing regions, especially in the tropics where extreme poverty conditions are widespread, high quality forest resources are abundant, and domestic markets are growing in importance.

That said, the findings of this synthesis report suggest that perhaps some of the past efforts related to poverty reduction on the part of international development agencies, civil society, and governments have been misguided. In particular, perhaps too much emphasis has been placed on large-scale forest enterprises as vehicles for job creation and economic growth in the developing world. This report decisively shows that small and medium forest enterprises make significant economic contributions to the livelihoods and well-being of significant numbers of poor people around the world, and can do so in a sustainable and environmentally responsible manner. In fact, globally the majority of forestry-based employment – in both developed and developing economies – comes from SMFEs. This suggests that international organizations and governments with concerns for poverty alleviation within the forestry arena should prioritize programs, interventions, and policy reforms that serve to create a more enabling environment for SMFEs to develop, compete, and thrive. Interventions and reforms may manifest themselves in varying forms – from facilitating the process of creating business associations to providing marketing assistance. Ultimately though, it is imperative that solutions and strategies be market-based and that the policy environments for SMFEs be fair.

While it is difficult to quantify the economic contributions that SMFEs make, we know that more than 20 million individuals are employed by such enterprises. We also know that these numbers are much higher – perhaps six or seven fold – when the ubiquitous informal sector that exists in developing economies is taken into account. That the economic contributions that SMFEs have not yet been enumerated is troubling, to say the least, and may explain, in part, why this sector is oftentimes overlooked in development strategies.

SMFEs are characterized by a diverse range of stakeholders, actors, businesses, structures, networks, products, and services, with dynamics varying from region to region. We recommend that a concerted effort to better understand the size, scope, characteristics, and dynamics of this sector be immediately undertaken. A logical starting point would be with survey research and case studies in developing regions to enumerate the degree to which SMFEs contribute to employment, well-being, and economic growth, and to provide a better understanding of the challenges and opportunities that these enterprises face. In the longer-term, this information should be used to inform civil society, development agencies, and governments alike on devising and implementing appropriate interventions and policy reforms aimed at reducing poverty in the forest dependent communities of the developing world.

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Appendices

Appendix A: Characteristics of developing countries with greater than 1,000,000 hectares of forested area and their potential for SMFEs.

Sources: Arnold and Townson, 1998; Ayyagari et al., 2003; CATIE / FAO, 2006; FAO, 1987; FAO, 2005b; FAO, 2007; Kozak, 2005; Macqueen and Mayers, forthcoming; Mead and Liedholm, 1998; Schneider and Enste, 2000; World Bank, 2006.

Country	Country Classification (Income Level)	Total Forest in 000 Hectares	Official Country Definition of SMEs (Number of Employees)	Estimated Number of SMEs	% Contribution of SMEs to Total Employment (and GDP)	% Contribution of Informal Sector to Total Employment (and GDP)	Existence / Quality of Information	SMFE Potential
Africa								
Algeria	lower middle	2145	< 250	580000	-	-	-	
Angola	lower middle	69756	-	-	-	-	-	
Benin	low	2650	-	-	-	-	-	
Botswana	upper middle	12427	< 100	16466	17.00[2]	-		
Burkina Faso	low	7089	-	-	-	-		
Cameroon	lower middle	23858	< 200	-	20.27 (-)	61.40 (-)		
Central African Rep.	low	22907	-	-	-	-	-	
Chad	low	12692	-	-	-	-	-	
Congo	lower middle	22060	-	-	-	-	-	
Cote d'Ivoire	low	7117	< 200	-	18.70 (-)	59.65 (-)		
Dem. Rep. of the Congo	low	135207	-	-	-	-	-	
Equatorial Guinea	upper middle	1752	-	-	-	-	-	
Eritrea	low	1585	-	-	-	-	-	
Ethiopia	low	4593	-	-	-	-	-	
Gabon	upper middle	21826	-	-	-	-	-	
Ghana	low	6335	< 200	-	51.61 (-)	71.76 (-)		
Guinea	low	6929	-	-	-	-	-	
Guinea-Bissau	low	2187	-	-	-	-	-	
Kenya	low	17096	< 200	-	33.31 (-)	41.10 (-)		
Liberia	low	3481	-	-	-	-	-	
Madagascar	low	11727	-	-	-	-	-	

Malawi	low	2562	< 50	747396	23.00[2]	-	
Mali	low	13186	-	-	-	-	
Morocco	lower middle	3025	< 200	450000	-	-	-
Mozambique	low	30601	-	-	-	-	
Namibia	lower middle	8040	-	-	-	-	-
Niger	low	1328	-	-	-	-	-
Nigeria	low	13517	< 200	-	16.72 (-)	48.85 (76.00)	-
Senegal	low	6205	-	-	-	-	-
Sierra Leone	low	1055	-	-	-	-	
Somalia	low	7515	-	-	-	-	-
South Africa	upper middle	8917	< 100	900683	81.53 (-)	- (-)	
Sudan	low	61627	-	-	-	-	-
Uganda	low	4190	-	-	-	-	
United Rep. of Tanzania	low	38811	< 200	1000000	32.10	42.24 (31.50)	
Zambia	low	31246	< 200	-	36.63 (-)	- (-)	-
Zimbabwe	low	19040	< 200	-	15.20 (-)	33.96 (-)	
Asia							
Afghanistan	low	1351	-	-	-	-	-
Azerbaijan	lower middle	1094	< 250[1]	58623	5.34 (-)	- (47.2)	-
Bangladesh	low	1334	-	-	-	-	-
Bhutan	low	3016	-	-	-	-	-
Cambodia	low	9335	-	-	-	-	-
China	lower middle	163480	-	8000000	78.00 (-)	-	
Dem. People's Rep. of Korea	low	8210	-	-	-	-	-
Georgia	lower middle	2988	< 250[1]	7257	7.32 (-)	36.67 (53.10)	-
India	low	64113	-	-	-	-	
Indonesia	lower middle	104986	< 100	16000000	79.20 (-)	37.45 (-)	-
Islamic Rep. of Iran	lower middle	7299	-	-	-	-	-
Kazakhstan	lower middle	12148	< 500[1]	-	12.92 (-)	40.00 (28.25)	-
Kyrgyz Rep.	low	1003	< 250[1]	22670	63.22 (-)	40.00 (-)	
Lao People's Dem. Rep.	low	12561	-	-	-	-	
Malaysia	upper middle	19292	-	19000	12.00 (-)	-	-
Mongolia	low	10645	-	-	-	-	-
Myanmar	low	34419	-	-	-	-	-
Nepal	low	3900	-	-	-	-	
Pakistan	low	2361	-	-	-	-	-
Philippines	lower middle	5789	< 100	817976	66.00 (31.50)	30.63 (50.00)	
Sri Lanka	lower middle	1940	-	-	-	-	-
Thailand	lower middle	14762	< 100	35000	18.00 (-)	- (71.00)	-
Turkey	upper middle	10225	< 200*	-	61.05 (27.30)	- (-)	-
Turkmenistan	lower middle	3755	-	-	-	-	-

Uzbekistan	low	1969	< 100	229600	57.00 (-)	-	-
Vietnam	low	9818	<200	200000	85.00 (24.00)	- (-)	-
Europe							
Belarus	lower middle	9402	< 250	25404	4.59 (9.00)	- (16.65)	-
Bosnia and Herzegovina	lower middle	2273	< 250	30000	53.00 (-)	- (-)	-
Bulgaria	lower middle	3690	< 250	224211	64.70 (39.29)	63.00 (31.25)	-
Croatia	upper middle	1783	< 250	-	62.00 (-)	70.00 (23.50)	-
Czech Republic	upper middle	2632	< 250	1985004	64.25 (-)	- (12.35)	-
Estonia	upper middle	2060	< 250	32801	65.33 (-)	- (17.85)	-
Hungary	upper middle	1840	< 250	153107	45.90 (56.80)	- (29.85)	-
Latvia	upper middle	2923	< 250	35571	20.63 (-)	- (29.80)	-
Lithuania	upper middle	1994	< 250	56214	31.60 (-)	-	-
Poland	upper middle	9047	< 250	1654822	61.81 (48.73)	- (16.45)	-
Romania	upper middle	6448	< 250	402359	40.20 (33.60)	42.73 (17.55)	-
Russian Federation	upper middle	851392	< 250	8441000	49.00 (10.50)	42.18 (34.30)	-
Serbia and Montenegro	lower middle	2887	< 250	63732	44.40 (-)	- (-)	-
Slovak Republic	upper middle	2177	< 250	61689	32.07 (37.10)	- (10.00)	-
Ukraine	lower middle	9584	< 250[1]	233607	5.38 (7.13)	- (38.65)	-
Central America							
Belize	upper middle	1348	-	-	-	-	-
Costa Rica	upper middle	1968	< 100	73518	54.30 (-)	- (28.65)	-
Cuba	lower middle	2348	-	-	-	-	-
Dominican Rep.	lower middle	1376	-	-	19.00[2]	-	-
Guatemala	lower middle	2850	< 60	173699	32.30 (-)	50.25 (55.70)	
Honduras	lower middle	5383	< 150	-	27.60 (-)	- (46.70)	
Mexico	upper middle	55205	< 500	2786011	48.48 (-)	- (38.05)	
Panama	upper middle	3278	< 200	40985	72.00 (60.12)	- (51.05)	-
Nicaragua	lower middle	2876	< 100	25301	33.90 (-)	- (-)	
Oceania							
Papua New Guinea	low	30601	-	-	-	-	
Solomon Islands	low	2536	-	-	-	-	-
South America							-
Argentina	upper middle	34648	< 200[1]	891300	70.18 (53.65)	- (21.80)	-
Bolivia	lower middle	53068	< 50	501333	-	-	
Brazil	lower middle	543905	< 250	4667609	56.50 (-)	49.21 (33.40)	
Chile	upper middle	15536	< 200	522106	86.50 (-)	40.00 (27.60)	
Colombia	lower middle	49601	< 200	684646	67.20 (38.66)	53.89 (30.05)	
Ecuador	lower middle	10557	< 200	-	55.00 (20.03)	58.80 (31.20)	
Guyana	lower middle	16879	-	-	-	-	
Paraguay	lower middle	23372	< 100	8858	77.00 (-)	-	-
Peru	lower middle	65215	< 200	235995	67.90 (55.50)	54.56 (50.95)	
Suriname	lower middle	14113	-	-	-	-	-

Uruguay	upper middle	1292	-	-	-	-	-	
Venezuela	upper middle	49506	< 100	11314	-	-	-	

[1] Not an official country definition

low moderate high

[2] SME employment per population age 15 – 64 (%)