

Promoting decent employment in forestry for improved nutrition and food security



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Key points

- **Decent employment in forestry is a key to improving food security and nutrition for millions of people who rely on forests for their livelihoods.** A sustainable approach should look not only at creating more quality jobs in forestry, but also at upgrading existing ones. More and better jobs in forestry will ensure increased employment opportunities, higher incomes and productivity, and safer and more stable working conditions. This, in turn, will contribute to improving the availability of and securing stable access to adequate and nutritious food.
- **Promoting decent employment in forestry to improve food security and nutrition requires:**
 - **Better integrating labour and decent employment concerns in forest policies and programmes.** A necessary action is to **improve data and evidence** to support more effective policy-making.
 - **Increasing opportunities for entrepreneurship and employment in forestry while avoiding deforestation and forest degradation** to increase the availability of and access to food. This requires: supporting the development of sustainable small and medium-sized forest enterprises; removing constraints, such as insecure tenure rights, that trap poor people in low-status and low-productivity jobs; promoting the participation of small-scale forest producers in market-oriented activities in agroforestry, tree-growing, small-scale wood processing and the provision of ecosystem services; increasing opportunities for green jobs; and securing adequate skills and training, particularly for young people.
 - **Improving working conditions for forest workers**, especially the most vulnerable, such as contractors, migrants, women and youth. Adopting safer work practices, ensuring access to social protection for formal and informal workers, and guaranteeing more secure and stable contracts can all help increase productivity and stabilize access to nutrient-rich and diverse diets. Efforts are needed to **eliminate all forms of discrimination** and to ensure minimum living wages; equal opportunities for women and men; the elimination of child and forced labour; freedom of association; and protection of the rights of indigenous people and vulnerable groups.
 - **Increasing social dialogue and representation through effective and strong cooperatives, producers' organizations and forestry workers' unions.** Fostering collective action and increasing bargaining power will help improve access to finance, markets, better prices, inputs and technologies.
 - **Extending the outreach of forest certification schemes and codes of conduct that include social and labour aspects relevant to small-scale forestry** to promote sustainable forest use.

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1. Introduction

Forests contribute to food and nutrition security in many ways. According to the World Bank (2004), forests provide direct support to 90 percent of the world's 1.2 billion poorest people and to nearly half of the 2.8 billion people who live on US\$2 or less per day. Therefore, improving income and job opportunities through decent employment (Box 1) and entrepreneurship development in forestry can make a significant contribution to the well-being and food security of some of the world's poorest people (Blombäck and Poschen, 2003; FAO, 2011a; Angelsen and Wunder, 2003).

More than 1.6 billion people depend on forests for their livelihoods.² Forests provide jobs, staple and supplemental foods, fuel for cooking and for daily energy needs, forage, building materials, and pharmaceuticals derived from plants (Byron and Arnold, 1999; FAO, 2009, 2011a; Trossero, 2002). Often, forest products are an important complement to agricultural incomes and act as a safety net in times of hardship and unemployment and during lean seasons (FAO, 2012b; Angelsen and Wunder, 2003).

Forests are a significant source of employment and income, especially in developing countries. The aims of this paper are to analyse the linkages between employment in forestry and food security and nutrition and to demonstrate how promoting decent employment, especially in small and medium-sized forest enterprises (SMFEs), is a key to improving food security for forest workers and their families. The first section provides an overview of employment in forestry and describes the main decent work challenges that characterize the sector. The second section discusses the linkages between employment in forestry and the four dimensions of food security: availability, access, utilization and stability.³ The final section provides policy recommendations.

1: Decent work

According to the International Labour Organization (ILO), the concept of decent work embodies the aspirations of people in their working lives. It involves opportunities for productive work that delivers a fair income, security in the workplace and social protection for families; good prospects for personal development and social integration; freedom for people to express their concerns and to organize and participate in the decisions that affect their lives; and equality of opportunity and treatment for all women and men.

The decent-work agenda is summarized in four strategic pillars:

- employment creation and enterprise development;
- social protection;
- standards and rights at work;
- governance and social dialogue.

Promoting decent rural employment is not only about creating new jobs and increasing the productivity of existing ones. It is also about addressing the whole range of decent-work deficits people face in rural areas.

Sources: ILO, 2006; FAO, 2012a.

² Forests-dependent households include: forest-dwellers such as hunter-gatherers and swidden cultivators; farmers living adjacent to forests, including smallholders and the landless; and forest workers, including artisans, traders, small-scale entrepreneurs and employees in forest industries (Blombäck and Poschen, 2003; Byron and Arnold, 1999; Scherr, White and Kaimowitz, 2003).

³ For a definition of food security, refer to: ftp://ftp.fao.org/es/ESA/policybriefs/pb_02.pdf;
[http://www.fao.org/fsnforum/sites/default/files/file/Terminology/MD776\(CFS___Coming_to_terms_with_Terminology\).pdf](http://www.fao.org/fsnforum/sites/default/files/file/Terminology/MD776(CFS___Coming_to_terms_with_Terminology).pdf)

2. Overview of employment in forestry

According to FAO (2008), 13.7 million people were formally employed in forestry worldwide in 2006. The proportion of formal employment varies considerably between regions, but over 60 percent is concentrated in only ten countries (ILO, 2011a). The number of formal jobs in forestry has declined since the 1990s, especially due to mechanization and business restructuring processes that have led to an increased trend towards outsourcing. Most job losses have been in industrialized countries and in Asia (FAO, 2008).

However, **employment in forestry is largely underestimated because it is mostly concentrated in the informal sector and in SMFEs.**⁴ The ILO (2001) estimated that, on average, for every 1 formal job in the forest sector there were 1–2 informal ones. According to more recent estimates (ILO, 2012a), 30–50 million people⁵, 90 percent of whom live in developing countries, are employed in unpaid subsistence work, primarily in fuelwood harvesting. The importance of employment in forestry is even greater if the 60 million **indigenous people** who depend primarily on natural forests for their livelihoods, and the 350 million people who obtain additional income from nearby forests, are considered (World Bank, 2004).

SMFEs are an important source of employment and income for small-scale forest producers. Although large-scale enterprises and plantations provide the bulk of opportunities for wage labour in forestry, SMFEs represent 80–90 percent of forest enterprises in many countries and more than 50 percent of employment in forestry (Mayers, 2006; Kozak, 2007). For example, SMFEs in Guyana employ 75 percent of the total workforce in the forest sector (Mayers, 2006), while in Mozambique the share is as high as 80 percent (Nhancale *et al.*, 2009).

2.1. Main decent work challenges

Employment in forestry is usually characterized by pervasive decent-work deficits. **Poor people are often the most disadvantaged. They face significant challenges in accessing gainful and remunerative employment and entrepreneurial opportunities.** Access to high-value value chains like those associated with timber and tree-planting is often limited for the poor given the requirements for capital, technologies and skills (FAO, 2003). Timber harvesting, transportation and processing are usually highly mechanized and therefore require large investments. Similarly, tree-growing is a high-risk activity because trees may need years to grow, and it is often hindered by insecure land tenure. Therefore, the poor, especially women, tend to be more involved in activities related to the collection and commercialization of non-wood forest products (NWFPs), which do not require substantial capital and are often accessible in open or semi-open settings (FAO, 2003).

The majority of people employed in forestry lack adequate skills and qualifications because training opportunities for forest workers are limited or non-existent in many developing countries. When available, training and skills development are often available only to high-level positions such as managers and supervisors, while the need for training to improve the productivity, occupational safety and health (OSH), and business and marketing skills of unskilled and semi-skilled workers is generally neglected (ILO, 2011c). In Indonesia, for example, the large majority of the forestry workforce does not have formal technical training (ILO, 2010). In Asia, there is evidence that the lack of adequate skills available locally and, in certain cases, community opposition to logging and plantation projects results in the hiring of migrant workers, creating additional competition for limited resources (FAO, 2012c).

⁴ Overall, there are few reliable data on employment in forestry. This was a major constraint in developing the present paper.

⁵ The estimate is on a full-time equivalent basis.

The participation of youth in forestry is declining in many countries. Given that prevailing employment and entrepreneurial opportunities in the sector are often characterized by low pay and profitability, harsh working conditions and physically demanding tasks, youth seem to lack motivation to work in forestry, even in more skilled positions (van Lierop, 2003; Ackerknecht, 2010). Also, rural youth have limited access to educational programmes that respond to sectoral skill needs.

Most forestry jobs do not provide sufficient levels of income to ensure access to adequate and nutritious food. The wage levels for forest-based employment are generally below the average of other sectors, especially in developing countries, and are usually close to the minimum wage (Blombäck and Poschen, 2003). Only in wood processing and pulp and paper production do jobs provide wages at levels similar to those in other manufacturing industries (FAO, 2012e). Larger firms tend to pay higher salaries compared with SMFEs – about 35 percent more in developed countries and almost 50 percent more in developing countries (Mayers, 2006).

While SMFEs constitute the large majority of enterprises in the forest sector, the quality of jobs they generate is relatively low. SMFEs are often highly informal, volatile and fragmented. They exhibit low productivity, difficulties in benefiting from economies of scale, and a high risk of failure within the first three years. SMFEs tend to be poorly integrated in markets, and their potential value is hindered by limited access to financial services, managerial and organizational weaknesses, unclear tenure rights and poor infrastructure (FAO, 1987; FAO, 2012b). As a consequence, SMFEs struggle to provide secure and long-term employment (FAO, 2012c), and basic salaries and working conditions are often worse than in larger enterprises in the sector (ILO, 2001).

In many countries, the gradual shift towards outsourcing in the forest sector has led to a deterioration in working conditions (Macqueen, 2001). Contractors have limited power to influence wages or the conditions under which they work, and are vulnerable to exploitation (Mayers, 2006). Contractors also usually work under short-term and discontinuous arrangements, earn inadequate incomes despite working long hours, have no access to social security such as health insurance and pensions, and are more exposed to hazards than formal workers (Blombäck and Poschen, 2003). A recent study in South Africa revealed that the shift towards outsourcing caused a 60–70 percent decrease in workers' wages, eased only by the subsequent adoption of minimum wage legislation (Mayers, 2006). Job insecurity in the sector is also associated with seasonality and the concentration of opportunities in certain stages of plantation establishment and harvest (FAO, 2012c; Scherr, White and Kaimowitz, 2003).

Work in forestry is highly hazardous and workers are often exposed to poor OSH conditions. Forestry work, particularly logging, is among the most dangerous occupations, with a high incidence of fatal and non-fatal accidents. Workers are exposed to heavy physical workloads, hazardous chemicals, extreme weather conditions and high levels of noise and vibration (Blombäck and Poschen, 2003). Accidents are often caused by limited supervision, inadequate tools and equipment, and a lack of skills and competence among workers, supervisors and managers (ILO, 2011c). While mechanization can reduce the danger and stress of work, it can also cause psychological and musculoskeletal problems (ILO, 2011c). In many countries, effective medical and preventive care is hampered by the absence of reporting on OSH incidents (Ackerknecht, 2010). Industrial-scale logging operations in tropical forests are also closely linked to the spread of malaria and HIV/AIDS (Mayers, 2006).

Due to its informal nature, forestry employment is seldom covered by national labour legislation, and access to social protection is limited.⁶ Most informal forest workers and those workers who are

⁶ We acknowledge that, in the absence of social protection, forestry can also represent an opportunity of last resort in times of hardship. In Malawi, for example, households that experienced the loss of a working-age adult were five times more likely to have increased fuelwood collection than non-affected households (Barany *et al.*, 2005).

self-employed in subsistence forestry are not enrolled in unemployment, injury or old-age insurance schemes. In addition, many forest workers find it difficult to access proper medical services, especially in remote locations. Informality and the remoteness of worksites make labour inspections more difficult (ILO, 2011c). Particularly worrisome is the situation of migrant workers, who are generally more vulnerable, less protected and more exposed to exploitation and dangerous working conditions than locally based workers (Blombäck and Poschen, 2003). In China, for example, informal migrant workers face difficulties in benefiting from the new Rural Cooperative Medical System because medical treatment and reimbursement can only be provided in designated hospitals in the individual's area of origin (Guo *et al.*, 2012).

Gender inequalities⁷ in forestry prevent women from fully benefiting from gainful and productive employment. Women are mainly engaged in informal activities and often undertake tedious tasks and occupations requiring attention and precision (Ackerknecht, 2010). In South Africa, women are overrepresented in manual log debarking and silviculture, which entails heavy work and exposure to occupational hazards (Manyuchi, 2002). Conversely, women are underrepresented in management and decision-making and therefore face more challenges than men in advocating for their rights. Women receive comparably lower wages and tend to be trapped in low-status, low-paid work: the average earnings of female workers in the formal forest sector are 10–40 percent lower than those of men (FAO, ECE and ILO, 2001). Moreover, social and cultural constraints and weak enforcement of property rights limit women's access to tenure rights and often exclude them from engaging in profitable forestry occupations.

Child labour is a significant concern in forestry. Children are often considered a convenient reserve of cheap labour for informal and seasonal work. Child labour is found, for example, in rubber, cocoa, oil-palm and banana plantations (Cruz and Ratana, 2007; ILO, ILSSA and RCFLG, 2012; IPEC, 2010). Children may be required to perform a wide range of tasks, such as climbing trees to harvest fruits, collecting honey from beehives, cutting rubber, planting trees and logging. These tasks expose children to significant OSH hazards, and working outdoors for long periods can also increase the risk of children contracting infectious diseases (ILO, 2012b). Moreover, isolated working sites expose children to high risks of sexual abuse, kidnapping and human trafficking. ILO (2012b) estimated that 85 percent of victims of **forced labour** in agriculture in some Latin American countries are younger than 12 years. The use of forced, child and trafficked labour is also commonly reported in Malaysian and Indonesian oil-palm plantations (World Vision Australia, 2012).

Social dialogue in forestry is weak. Unionization in forestry is limited, and informality, outsourcing and the geographical dispersion of workers make representation and social dialogue more complicated. In Chile, for example, there are about 136 unions, but only 10 percent of the workforce has union membership (Ackerknecht, 2003). Informal workers are rarely part of those organizations, and the capacity of unions and local institutions to organize and increase profits is relatively weak (Mayers, 2006). As a result, forest workers have low bargaining power to negotiate wage increases, better working conditions and access to skills development opportunities.

⁷ See also the background paper "Forests, food security and gender: linkages, disparities, priorities for action", prepared for the International Conference on Forests for Food Security and Nutrition, May 2013.

3. Decent employment in forestry is a key to improving food security and nutrition

Decent employment can be a powerful driver by which forestry can fully contribute to long-term food and nutrition security, reduced inequalities and sustainable development.⁸ This section presents arguments in the four dimensions of food security: availability, access, utilization and stability.

3.1. Food availability

More productive and decent employment can increase local food availability by contributing to a sustainable increase in food production.

Forests and trees directly contribute to food availability by providing a wide variety of plant and animal products found in markets in both rural and urban areas (FAO, 1992, 2000). Hoskins (1990) found that 60 percent of all food consumed in wooded areas in Thailand came directly from forests. A more recent study in the Lao People's Democratic Republic suggested that 80 percent of the population there consumed wild foods daily (FAO, 2011b).

Food availability could be improved by **promoting diversification, including more production of locally valuable NWFPs, encouraging the growing of fruit trees on farms, providing market support, and sustaining SMFEs**. The rural poor often produce, process and sell forest products (e.g. making mats and baskets and selling fuelwood) in the absence of other employment opportunities and as a part-time activity within farming households. However, the sustainable use of these resources may be threatened by deforestation and the absence of sustainable forest management regimes (Kajembe *et al.*, 2000).

Box 2: Women's good practices in SMFEs regarding NWFPs

Women's involvement in forest activities is shaped partly by cultural norms, and reproductive responsibilities impede their participation in NWFP-producing SMFEs (CIFOR, 2012).

Training on product quality management, financial management, marketing, and information technology is a way to promote women's involvement in forests activities (Purnomo *et al.*, 2011). Collective action can also promote women's involvement in NWFP production because it can increase their bargaining power with sellers and access to tools and credit (Schackleton *et al.*, 2011). Promoting women's involvement in NWFP production also entails apprehending and taking into account the specific constraints faced by women, including time and mobility. For example, a cellular phone pricing system in Zambia is enabling women to negotiate the prices of their products with buyers without leaving their houses.

Sources: CIFOR, 2012; Purnomo *et al.*, 2011; Schackleton *et al.*, 2011.

Forests contribute to food availability through agroforestry.⁹ Hence, opportunities for employment and entrepreneurship development in agroforestry should be increased (FAO, 2011a, 2013). A study in Nepal on the impact of agroforestry on soil fertility and farm income showed that agroforestry interventions nearly doubled farm income, from US\$800 to US\$1580 per hectare (Neufeldt *et al.*, 2009). Given the large number of SMFEs in agroforestry, they can play a critical role

⁸ This section builds on a previous FAO publication coordinated by the Decent Rural Employment Team (FAO, 2012a).

⁹ Agroforestry systems include both traditional and modern land-use systems where trees are managed together with crops and animal production systems in agricultural settings. Agroforestry serves to enrich farmers through the harvesting of diverse products at different times of the year. It also brings job opportunities from the processing of tree products, expanding the economic benefits to rural communities and national economies (FAO, 2013).

in driving the modernization of the sector, but they face several bottlenecks. Increasing investments in agroforestry and timber production and the competitiveness of SMFEs by improving access to credit and financial services is a priority to increase the contribution of forests to food production and rural growth. Producer organizations and other forms of organization can facilitate market access and strengthen the bargaining power of small producers. Producer organizations can also help mitigate disadvantages related to scale and allow producers to use surpluses more strategically, enabling the upgrading of product quality (Macqueen, 2008). In some cases, investments in agroforestry will bring productivity gains, such as through mechanization. Although there may be job losses in the short term, labour demand is likely to increase as new activities and job opportunities for wage employment are generated in the sector.

Many small-scale producers are also part-time wage workers. Promoting decent employment in forestry value chains and contract farming for agroforestry production can contribute to more equitable contractual arrangements and safer working conditions. Given the growing demand for high-value foods, it can be expected that more labour will be needed in modern agro-industries, including agroforestry, as well as in the distribution and retail segments (ILO, FAO and IUF, 2007).

Investing in human capital and providing adequate support to disadvantaged groups in forest communities, such as women, youth, indigenous people and migrant workers, is needed to maximize the contribution of forestry to increased food availability. Given the crucial role of women as food producers and especially in the collection of NWFPs, the gender gap should be closed through interventions that target women and ensure that they have access to productive resources and services (Box 2). Rural youth also have a key role to play in the forest sector, given their great capacity for innovation and entrepreneurship. Efforts are needed to make the forest sector attractive to youth by increasing returns for labour and increasing opportunities for entrepreneurship in profitable forest-based activities.

Forests and trees promote food availability indirectly by increasing the sustainability of agricultural production systems (Dhyani *et al.*, 2007). Forests and trees maintain land productivity by drawing nutritive elements from deep in the soil into the production system and reducing wind and water erosion (FAO, 2000). A sustainable approach to agroforestry should be promoted that recognizes the potential for job creation in improved soil management and water/irrigation systems. However, trade-offs may be involved in the conversion of forests to agricultural land, employment and, ultimately, the availability of food. As agroforestry systems evolve towards more sustainable practices, the type of jobs and skills required will also evolve. Changes in the seasonality of production in agroforestry systems will affect labour demand, which is particularly relevant given the role of forestry as a safety net in lean seasons.

More gainful employment in forestry can also contribute to food availability through productivity gains in the agricultural sector. For example, the provision of fodder contributes to more efficient livestock production. Income from forest products is often used in agriculture, such as to purchase seeds, hire labour for cultivation and generate working capital for trading activities (Byron and Arnold, 1999).

3.2. Food access

Poor people rely mainly on the use of their labour to earn their livelihoods and gaining access to food (FAO, 2012a). In Mozambique, forest-dependent households derive 30 percent of their income from unprocessed forest products such as fuelwood, fruits, mushrooms, insects, honey and medicinal plants (FAO, 2011b). In the northwest of Cameroon, beekeeping and honey production are an important secondary source of income, with over 80 percent of households deriving 30–60 percent of their annual cash income from these activities (CIFOR, 2010). However, informality and

widespread decent work deficits inevitably hinder the capacity of households to generate sufficient and stable income to access adequate and nutritious food.

Creating more and better wage employment opportunities in forestry and supporting self-employment through the development of sustainable SMFEs are ways of improving access to food by expanding income-generating opportunities for forest-dependent households. Aside from jobs in large forest companies, small producers and community groups can find opportunities in supplying local markets, responding to **domestic demand** for food, fuelwood, construction wood, rough furniture and raw materials. In so doing, SMFEs could also generate positive spillovers for local communities by creating economic opportunities in the labour-intensive, non-tradable, rural non-farm sector, including in food-processing and retailing (Upton and Otte, 2004).

Increasing the participation of small producers in processing and value addition can promote local employment. The commercial production, processing and marketing of NWFPs offers considerable scope for decent employment. Opportunities for small-scale forest producers in commercial forestry could be further expanded by promoting their participation in **market niches**. Scherr, White and Kaimowitz (2003) identified a number of potential opportunities, including in the production of commodity-grade timber, appearance-grade timber, certified wood products, pulpwood and other chemically treated wood products, and NWFPs and in the provision of ecosystem services. The challenge is to identify viable products in a given context while avoiding the overexploitation and depletion of the natural resource base (Hoskins, 1990; FAO, 2012b).

Smallholder tree farming and agroforestry present an opportunity for local communities to generate income and accumulate assets, although the potential varies between countries. For example, positive experiences have been documented in Viet Nam and the Philippines, while there have been failures in Indonesia and Thailand (FAO, 2012c).

Ecosystem services can also generate income for poor smallholders and forest communities. Various financial instruments are being promoted to protect and increase the ecosystem services provided by forests, such as carbon storage, watershed protection and biodiversity conservation. There is also increasing use of payment systems for access rights for hunting, fishing and ecotourism. For example, ecotourism is expanding in Brazil, Ecuador, Nepal and Zimbabwe, and poor people can benefit from this through off-farm employment to provide services and goods for tourists and by protecting sites of high cultural, environmental or religious value (Scherr, White and Kaimowitz, 2003; FAO, 2003). Forest ecotourism is creating jobs among rural farmers in several provinces of China and providing non-farm tribe communities in India with alternative livelihoods and a market for their NWFPs (FAO, 2012c).

Forestry has great potential to create **green jobs**, particularly through activities such as reforestation, afforestation, agroforestry and sustainable forest management (ILO, 2011b). Many **public works programmes** include land management and environmental protection activities, such as soil conservation, the development of irrigation infrastructure, and reforestation (Subbarao *et al.*, 2013). These programmes provide temporary employment to unemployed and low-skilled workers while building sustainable community assets and promoting environmental restoration (Box 3).

Box 3: Working for the environment

In South Africa, the government has launched “working for the environment” programmes. In particular, the “working on fire” programme provides jobs and promotes forest protection through fire-fighting and fire prevention activities. The programme employs more than 5,000 people, 85 percent of whom are young and 33 percent of whom are women.

The “working for water” programme is helping to ensure the balanced and sustainable functioning of forests by removing alien invasive plants, which threaten biodiversity and accelerate soil erosion (UNEP, 2007). Since 1995, this programme has provided jobs and training to 20,000 disadvantaged people, 52 percent of them women.

Sources: www.workingonfire.org/about/wof-programme; www.dwaf.gov.za/wfw/; UNEP, 2007.

Access to food can also be increased by improving working conditions because this will increase productivity and income. Enforcing minimum wage legislation contributes to ensuring fair pay for work performed, and this in turn contributes to increasing workers’ purchasing power. Governments and enterprises should ensure equal opportunities and treatment – equal pay and access to education, training and credit – for all their workers, including women, youth, migrant workers and indigenous people. Although some enterprises have improved social benefits and working conditions to allow a better balance of productive and reproductive work for women, much still needs to be done to ensure equality and protection. Increasing employment opportunities for rural women has been demonstrated to improve access to food because women are more likely to re-invest income for family needs and in particular in food (Arnold, 1995; FAO, 2006). In Benin and Cameroon, for example, women increase their collection and sale of NWFPs in the pre-harvest season to meet children’s education needs (Schreckenber *et al.*, 2002; FAO, 2011b).

A healthier and safer working environment can increase workers’ productivity and competitiveness by reducing hazards and fatalities and the number of days lost due to accidents (Ackerknecht *et al.*, 2005). Since the 1990s, standards and regulations¹⁰ have been developed to improve OSH in forest operations. However, more needs to be done to enforce such standards and to ensure their respect and applicability, including in SMFEs and for informally employed and self-employed workers and vulnerable groups (Blombäck and Poschen, 2003). Improving and extending OSH training for workers and supervisors, and taking risk-control measures for identified hazards, will bring significant long-term gains (ILO, 2011a).

Forest certification is perhaps the most widely known and applied measure to promote decent work in forestry. Certification helps to ensure the respect of adequate working conditions, OSH standards and the prevention of child labour (Blombäck and Poschen, 2003). National forest certification schemes are already operational in many countries, including Brazil, Chile, Indonesia and Malaysia, and are being developed in others (e.g. China and Gabon) (Muthoo, 2012). The **adaptation of certification to small-scale and indigenous forestry** is also important to increase benefits for forest communities while supporting environmental and social sustainability.

The lack of **quality training** needs to be addressed to increase the level of professionalism and labour productivity in forestry. Proper training should be promoted to ensure the effective and safe use of new equipment and to meet increasing demand for higher skills (Ackerknecht, 2010; FAO, 2012c).

¹⁰ International standards and regulations include: the ILO Code of Practice on Safety and Health in Forestry Work, principles and standards for sustainable forest management certification (e.g. those of the Forest Stewardship Council), the International Organization for Standardization (ISO) standards for quality management (ISO 9001) and environmental management (ISO 14001), and the subsequent addition of a series of OSH evaluation criteria (OHSAS 18001) (Ackerknecht, 2010).

Specific training programmes need to be developed for small-scale logging and wood processing and for certification and the provision of ecosystem services (Scherr, White and Kaimowitz, 2003).

Promoting decent employment in forestry also requires forward-looking investments, such as **in the education and healthy development of children and young people**. Child labour prevents children from developing both physically and mentally and hinders their capacity to acquire skills needed to enter the labour market as productive youth. A skilled and young workforce could bring important benefits to the forest sector, particularly through the increased uptake of innovation and technologies. Investments in education and vocational training as well as in raising awareness of the value of forest work are needed to attract youth to the sector and to ease the problem of unemployment and underemployment in rural areas.

3.3. Food utilization

Generally, poor households have nutritionally poor diets. **Forest products play an important role in balancing the variety of daily food intake by rural households** (FAO, 2011b). Forestry and agroforestry can provide access to edible wild leaves, fruits, seeds and nuts, roots and tubers, mushrooms, honey, eggs and wild animal species (e.g. birds, insects, rodents and mammals). Such products can be critical sources of protein, vitamins and nutrient-rich supplements such as calcium and iron, and they add both flavour and nutritional value to diets. In 60 developing countries, hunting and fishing in forest areas supply more than one-fifth of the population's protein requirements (FAO, 2011b).

Employment in forestry is linked to food utilization through income generation. **Many poor workers in forestry are net food buyers**, but low incomes hamper access to adequate and nutritious food (FAO, 2012a). Therefore, by increasing disposable income and improving working conditions, decent employment in forestry can facilitate people's access to staple foods and nutrient-rich dietary supplements and can guarantee adequate food consumption by ensuring sufficient access to food and to energy for cooking.

For more than 2 billion people, **fuelwood** is the main energy source for cooking, food processing and food preservation (FAO, 2012b, 2011b). A lack of fuelwood may have negative impacts by reducing the number of meals and by worsening food quality by forcing the consumption of undercooked products. Energy demand will continue to rise; as fuelwood become scarcer, opportunities for smallholders could emerge in sustainable tree-growing and through the more efficient and sustainable use of wood resources (Angelsen and Wunder, 2003).

Poor working conditions are linked to malnutrition by perpetuating a vicious cycle of low productivity, low wages, malnutrition, ill health and low working capacity (FAO, 2012a). On one hand, poor working conditions affect the capacity to obtain adequate and diverse food, leading to poor nutritional outcomes. On the other hand, malnutrition affects the capacity to work and to perform certain tasks, increasing the possibility of contracting diseases and of absenteeism, therefore affecting labour force participation and labour productivity. Poor health may result in losses of days worked or reduced working capacity. This can negatively affect production as well as the ability to innovate and adopt new technologies, leading to lower income and wages and ultimately reducing access to food (FAO, 2012a; Asenso-Okyere *et al.*, 2011). This vicious cycle is particularly worrisome in forestry, where work is physically demanding and where there is often inadequate protection for workers.

Potential negative effects on food utilization due to increased working hours should be considered, particularly for **women** (World Bank, 2007). Women are increasingly active in the labour market, but they are also responsible for the bulk of unpaid care work and food preparation (FAO, 2012a). Hence, while women should be fully supported to play a bigger role in forestry value chains, adequate solutions should be put in place to free up their time, for example by facilitating child care services,

adopting labour-saving technologies, and providing half-day rather than full-day training opportunities (Shackleton *et al.*, 2011).

3.4. Food stability

Safer working conditions, more stable contracts, increased social dialogue and access to basic social protection are all critical for enabling people to maintain stable levels of quality food consumption over time and to increase resilience to sudden shocks and cyclical events such as seasonal hunger and food shortages.

Diversification, both of production and occupations, is often an important household strategy to minimize risks and reduce vulnerability, especially when income and production patterns are seasonal (FAO, 2012d). The majority of rural households engage in more than one occupation, diversifying activities in rural non-farm economies. In many cases it is possible to combine NWFPP activities with farming by exploiting seasonal complementarities. The collection of NWFPPs is also an important safety net in itself because NWFPPs provide food during lean seasons and in times of famine and food shortages. In Senegal, for example, certain wild fruits and plants are consumed to meet seasonal shortages of vitamins (FAO, 2011b). In addition, fuelwood allows the preservation of food, especially by traditional smoking and drying, which can then be stored for consumption in non-productive periods.

Sustainable forest management creates the conditions for more stable sources of income and jobs, improving the resilience of forest communities. The use of forest resources by indigenous people is illustrative. Based on findings in Cameroon, Laird *et al.* (2011) argued that indigenous people turn to forests to cope with shocks and that indigenous forest management systems help conserve forest biodiversity, which acts as natural insurance and decreases the risk of food and income shortfall.

Agroforestry has great potential to reduce vulnerability to climate shocks. Permanent tree cover protects and improves the soil while increasing soil carbon stocks. Trees on farms also contribute to climate change adaptation and reduce the dependency on single staple crops (Neufeldt *et al.*, 2009). In the event of environmental or other shocks, trees can continue to provide fruits, fodder, fuelwood, timber and other products with high commercial value.

Improving the working conditions of forest workers also contributes to food stability. In the absence of insurance mechanisms and social protection measures, a temporary or permanent illness or an accident resulting in diminished working capacity or a loss of working days can threaten the food security of workers and their families. Implementing better working standards and social protection mechanisms in forestry can decrease the negative consequences¹¹ of such shocks and also their occurrence.

For example, the implementation of the Labour Competencies Certification and Lifelong Training Programme in Argentina contributed to a substantial decrease in work-related accidents and occupational risks in forest operations while improving employability and the spread of better practices (Peirano, 2012). The programme focused on increasing social dialogue among relevant stakeholders and promoting skills development and the certification of workers in medium and large forest enterprises in the formal sector and subsequently in informal SMFEs.

Promoting decent work in forestry should be complemented by social protection.¹² The aim is to protect the most vulnerable and labour-constrained workers and to provide buffer mechanisms that

¹¹ e.g the temporary inability to work or permanent loss of an adult in the household, often result in damaging coping strategies, increasing the likelihood of using child labour or increasing the burden on women (Asenso-Okyere *et al.*, 2011).

¹² Social protection should protect the most vulnerable and labour-constrained who cannot provide for their livelihoods. It should also have a prevention function to ensure that those who are vulnerable to shocks do not resort to damaging coping strategies that result in further poverty and food insecurity. Social protection may also have a livelihoods promotion

allow subsistence farmers, small-scale producers and informal self-employed workers to better cope with income fluctuations, benefit from stable access to food, and make more productive and longer-term investments that will translate into asset-building and increased productivity (FAO, 2012a; Devereux and Sabates-Wheeler, 2004; HLPE, 2012). For example, Ethiopia's Productive Safety Net Programme also helped to increase the number of trees planted by beneficiary households on their own farms, independently of the programme (Andersson, Mekonnen and Stage, 2011). Among the possible reasons for this is that participants acquired relevant skills from the programme that they then used to grow their own trees. Another possible (and complementary) explanation is that income provided by the programme helped to reduce the risk of investment in tree-planting (Andersson, Mekonnen and Stage, 2011).

Box 4: Promoting forest employment for Kenyan youth

The Kimathi Horticultural Tree Nurseries Group is a revealing example of a public employment programme empowering youth in forestry. It is part of the Work for Youth programme in Kenya (the Kazi Kwa Vijana programme), which in 2009/2010 involved between 200 000 and 300 000 young people.

The Kimathi Horticultural Tree Nurseries Group was launched in early 2009 in response to a severe drought and involves young people in the planting and nurturing of trees in the Zaina forest area. The programme created employment opportunities for youth while involving them in forest conservation activities and raising their awareness of environmental issues.

Young people were engaged in the raising of tree seedlings, tree-planting and pruning in forest plantations. In many cases, profits were reinvested in productive activities such as beekeeping, poultry farming and rabbit rearing. The programme favoured the empowerment of youth, fostering their involvement in management and decision-making, while a gender quota (a minimum 30 percent of female beneficiaries) facilitated women's active participation in the group.

Source: ILO and OECD, 2011.

The Kazi Kwa Vijana programme in Kenya is another example of a public work programme with forest components (Government of Kenya, 2010). The programme aims to create short-term employment opportunities for unskilled youth through labour-intensive public work programmes, including reforestation and afforestation (Box 4). Long-term improvements in food security can be achieved by integrating developmental objectives into the design and implementation of public works programmes (FAO, 2012a). This means including aspects of vocational training and skills development relevant to forest activities and geared towards young people and women, and facilitating group cooperation and empowerment.

component, favouring the accumulation of human capital and physical assets, for example through public works or cash transfer programmes (Devereux and Sabates-Wheeler, 2004; HLPE, 2012).

4. Conclusion and policy recommendations

Decent employment in forestry is a key to improving the food and nutritional security of millions of poor people who rely on forests for their livelihoods. In order to fully exploit the potential of decent employment for achieving food security and reducing rural poverty, the prevailing decent work deficits that characterize employment in forestry need to be addressed.

Promoting decent employment in forestry will create high-quality jobs and improve the conditions of existing jobs in the sector, helping to increase income and productivity to support sustainable rural production. The provision of decent employment will also enable people to access diverse and nutrition-rich diets at all times and allow forest communities to diversify their livelihoods and increase their resilience to shocks through safer and more stable working conditions.

A number of policy options are available to promote decent employment in forestry:

1. Better integrate labour and decent employment concerns in forest policies and programmes.

Governments, donors and investors should favour forest programmes with larger impacts in terms of job creation and improved working conditions. Forest-sector strategies should be linked to an overall development agenda that promotes inclusive, employment-enhancing and sustainable patterns of growth. The provision of adequate financial resources to cover social and labour aspects should be included in forest policies and management plans, as well as in strategies for the development of related subsectors. Forest stakeholders, including in the private sector and civil society, should be involved in national policy processes to incorporate forest aspects into wider national policies and programmes, especially those related to employment and labour, social protection and education.

2. Improve data and evidence on employment in forestry.

While there has been some progress in improving data on labour in the forest sector, it has been insufficient. Data and analysis should cover employment patterns in the formal forest sector and provide better estimates of informal work and sound evidence about the quality of employment in the sector. Aspects on which more data are needed include gender and age differentials, working conditions, the under-use of skills, the seasonality of occupations, multiple job-holding, informal recruitment practices and networks. Efforts are also needed to provide evidence of the impacts of policies and programmes through sound monitoring and evaluation systems. Capacities and tools to develop such analyses should be promoted at the country and local levels.

3. Increase opportunities for entrepreneurship and employment in forestry while avoiding deforestation and forest degradation.

SMFEs should be promoted by removing the constraints, such as insecure tenure rights and inadequate access to credit, that trap poor people in low-status and low-productivity activities; and by promoting the participation of small-scale forest producers in market-oriented activities in agroforestry, tree-growing, small-scale wood processing and the provision of ecosystem services. Support should include activities to develop marketing skills and to add value to products.

Governments can help to leverage the potential of SMFEs to reduce poverty and improve food security by, for example, granting and protecting legal access to forest resources by rural communities. Governments should commit to curbing illegal logging and the unsustainable harvesting of NWFPs through governance and legal reforms, training and the provision of information to forest users, and by reducing unfair competition. Efforts to simplify procedures for SMFE registration would help reduce costs to SMFEs and increase value-adding opportunities for poor forest-dependent households and communities. Governments could also provide financial incentives, including tax breaks, for start-up SMFEs.

Opportunities for creating green jobs in forestry should be pursued, including through payment schemes for ecosystem services. **Skills development programmes** for the forestry workforce could be strengthened in collaboration with the private sector and forest producer organizations. Training programmes should be complemented with monitoring and certification systems that accredit workers' skills and thus increase their employability.

4. Improve working conditions for forest workers.

There is a need to raise awareness among forest stakeholders of the importance of decent working conditions for the productivity and sustainability of the sector. Likewise, vulnerable groups, such as women, youth, migrants and small-scale operators, should be informed about their rights. Improving working conditions, guaranteeing access to social protection for formal and informal forest workers, adopting safer practices, and guaranteeing more secure and stable contracts all have the potential to increase productivity and help provide stable access to nutrient-rich and diverse diets.

Efforts are needed to **eliminate all forms of discrimination** and to ensure minimum living wages, equal opportunities for women and men, the elimination of child and forced labour, and the protection of the rights of indigenous people. Stronger collaboration between forest and labour stakeholders should be promoted to strengthen the **implementation of OSH standards**.

In line with efforts to extend the coverage of **social protection** in rural areas, public employment programmes with a forestry focus should be further promoted. Such programmes could employ local people, especially during lean seasons, and develop relevant skills among participants while contributing to the achievement of environmental objectives. High levels of casual work and vulnerable employment among forest workers call for measures to promote access to social security, including pension systems and other social insurance schemes.

5. Increase social dialogue and representation through effective and strong cooperatives, producer organizations and forest workers' unions.

Fostering **collective action** and increasing bargaining power will help improve access to markets, better prices, inputs and technologies. Cooperatives, producer organizations and unions are also important for the empowerment of small-scale forest producers and forest workers, including by strengthening their rights and capabilities and increasing their participation in policy processes. Social dialogue and policy consultations should ensure that youth, women and indigenous people are represented and can participate in decision-making.

6. Extend the outreach of forest certification schemes and codes of conduct that include social and labour aspects relevant to small-scale forestry.

Forest certification schemes and codes of conduct are important complementary instruments to legislation. The fact that the major internationally recognized forest certification schemes have integrated the core labour standards of the ILO with their own standards is a positive sign. This is necessary to extend the outreach of national and international labour standards, and it also helps to promote sustainable forest use. Further efforts are needed to assist small-scale and community forest enterprises to achieve forest certification. Innovative practices should be encouraged to gear assessment and audit procedures towards small-scale and community-based operations, as well as to provide communities and forest producers with the necessary expertise on the process and the technical requirements of certification schemes.

Considering the contribution of decent work to food security and nutrition in forest communities, FAO, governments, the private sector and development partners should invest strategically in the promotion of decent employment in forestry. This is fundamental to addressing the interlinked challenges of fighting rural poverty and feeding a growing world population sustainably.

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