

## SUSTAINABLE LAND MANAGEMENT :

### Creating employment opportunities and jobs

(an attempt to compile some background information on SLM employment opportunities, can SLM create employment opportunities, examples of SLM jobs created, land and labor nexus, green jobs, youth employment with a focus on SSA, projects with number of jobs created etc))

#### DID YOU KNOW:

- **Roughly 122 million young people will enter the labor force between 2010 and 2020, with slightly more than half of them from rural areas**, putting immense pressure on both agriculture and non-farm sectors to generate employment opportunities. However, even under highly favorable conditions, [Fine et al. \(2012\)](#) estimate that non-farm sectors can generate only
  - 70 million wage jobs over this same period, mainly in manufacturing, retailing, hospitality, and government. This means that farming will be called upon to provide gainful employment for at least a third of Africa's young labor force

However, for agriculture to effectively fulfill this mandate, young people growing up in densely populated areas will require **access to farm technologies** that are radically more productive and profitable, as well as access to new land. Hence, even as Africa becomes progressively urbanized, smallholder agriculture will remain fundamental for absorbing much of Africa's burgeoning young labor force into gainful employment ([Losch, 2012](#)). A related consequence of Africa's demographic "youth bulge" is that intergenerational subdivision of land will constrain the options of rural youth entering the labor force. Intergenerational and inter-sibling conflicts may intensify further because rural parents in their 50s and 60s may not yet be ready or able to "retire" and bequeath their land assets to their children, or otherwise subdivide their land.

- Evidence from Northern Tanzania shows that as land increases in value due to emerging commercial interests, fathers are less willing to provide land to their children, which further increases the prevalence of intergenerational conflict
- **Scarcity amidst abundance: the nexus of land and labor in rural Africa.** One objective of this special issue was to better understand the nexus between land resources and demographic forces, including birth and migration rates, and historical settlement patterns. Labor was essentially "pulled" out of rural areas into urban-based employment. There still remains great potential for such processes to unfold in Africa (with appropriate policies and incentives), and in some countries, such as Ghana, these processes are already somewhat advanced.
- Successful entrepreneurs in farming will increasingly require access to skilled agricultural and marketing extension
- The need for skill training also applies to farming, though the skill set required for successful farming is rapidly evolving.

- This skill set includes skills in using improved technologies (e.g., herbicides, conservation farming practices, use of cell phones for accessing soil testing services, market information and finance), accounting skills, navigating state and private sector institutions for accessing services such as finance, extension support, veterinary services, and marketing support.
- Given these realities, Africa's young rural people entering the labor force will need to be equipped with the skills needed for them to make viable and meaningful livelihoods from farming. This has major implications for the future development of the region's educational systems.

Agricultural and rural development strategies in the region will need to more fully anticipate the implications of Africa's rapidly changing land and demographic situation, and the immense challenges that mounting land pressures pose in the context of current evidence of unsustainable agricultural intensification, a rapidly rising labor force associated with the region's current demographic conditions, and limited nonfarm job creation. These challenges are manageable but will require explicit policy actions to address the unique development challenges in densely populated rural areas.

**Source:** Land pressures, the evolution of farming systems, and development strategies in Africa: A synthesis . T.S. Jayne et al. / Food Policy 48 (2014) 1–17

<https://library.unccd.int/Details/articles/200000106>

- **Agriculture holds the key to broad-based economic growth, poverty reduction and food security in Sub-Saharan Africa (SSA).** This is due to the importance of the sector for SSA economies, the extent of rural poverty and the dependence of 50 million small farms on agricultural incomes. It is well documented that growth generated by agriculture in SSA is several times more effective in reducing poverty than GDP growth in other sectors. In many African countries, agriculture is the predominant sector of the economy, accounting on average for 25% of SSA's GDP and well above this level for many countries (see chart 1). Given that agriculture creates jobs, generates income, produces food and contributes to social stability, the sector is essential to SSA's development. Expanding it judiciously can pave the way to a future where Africa can feed itself and feed the world. In an effort to encourage countries to increase food security, reduce poverty, promote economic growth and create wealth through agricultural growth, the African Union has declared 2014 the year of agriculture and food security in Africa.
- **See also:**
- **Protecting food security in Africa during COVID-19**  
<https://www.brookings.edu/blog/africa-in-focus/2020/05/14/protecting-food-security-in-africa-during-covid-19/>

- **Unlocking Africa's Business Potential. Trends, Opportunities, Risks, and Strategies**  
<https://www.brookings.edu/book/unlocking-africas-business-potential/>

**Job creation is one of SSA's top challenges and agriculture accounts for over half of total employment (see chart 2).**

Given that 63% of the population in Sub-Saharan Africa is rural and lives largely off agriculture, the extent and path of agricultural development has enormous economic and social implications. History shows that there are few pathways from an agrarian economy which do not involve an early agricultural revolution. Hence the arrow on chart 1 illustrating the likely future path for most SSA economies: grow the agricultural sector before other sectors take over.

**Smallholder farming accounts for 80% of all farms and most of the land cultivated in SSA.**

- These 50 million small farms produce the majority of agricultural goods and contribute in some countries to 90% of production.
- More than 75% of agricultural outputs in Kenya, Tanzania, Ethiopia and Uganda are produced by smallholder farmers.
- Some countries, such as Zambia, Mozambique, Kenya, Rwanda and Nigeria, have a relatively large number of commercial farms with some very large corporate farms in addition to a majority of small farm
- Farms are very small, on average, in most of SSA (see chart 38 for selected countries). In West Africa, sizes tend to be slightly bigger but households as well.

**Half of employment growth between 1999 and 2009 in SSA is due to growth in agriculture, according to the Food and Agriculture Organisation (FAO).** Increased agricultural productivity generates employment. Indeed, in many parts of SSA, rather than through capital-intensive technologies, farming is done through small-scale, labour-intensive technologies which are difficult to mechanise – for example cotton hand-picking, tea harvesting, horticulture (cultivation of garden plants) and floriculture. Thus, rather than driving lower demand for labour, **higher agricultural productivity creates jobs.**

**Given the important role of agriculture in SSA's economies and its position as the largest employer, it is central to structural transformation.** Referring to the reallocation of economic resources from activities of low productivity to more productive ones, structural transformation includes both the rise of new, more productive activities and the movement of resources and labour from traditional activities to these newer ones. This can happen all along the agricultural value chain. For instance, once agricultural production has reached high levels of reliability and quality, value addition can be gained through the processing of agricultural commodities. 2(For more on this, see African Economic Outlook 2013. African Development Bank. OECD. UNDP. Economic Commission for Africa. 2013. )

**Developing the broad agricultural sector is also key to Sub-Saharan Africa's future – generating jobs, incomes and food.**

- Most of the world's uncultivated arable land is in Sub-Saharan Africa (SSA) yet many African countries rely on imports to feed their people.
- This provides in turn a strong case for investments in SSA's food value chain. On top of new productive land and large yield gaps, SSA offers fast-growing consumer markets.
- In Sub-Saharan Africa, around 25% of the population is undernourished and this share has declined less than in other regions over the past two decades or so (see chart 5).
- The number of people affected by hunger is actually increasing in SSA (see chart 6). Based on its current agricultural productivity rates, SSA would meet 25% of its food needs by 2030.8(Global Agricultural Productivity Report 2013. Global Harvest Initiative )

**Small-scale farmers in developing countries often do not have stable land tenure and this is not conducive to investing in soil fertility and other sustainable agricultural practices.** 35 (This is an important issue further discussed in Foreign investment in farmland. Schaffnit-Chatterjee. DB Research. September 2013 ) see link [https://www.dbresearch.com/PROD/RPS\\_EN-PROD/PROD000000000480280/Foreign\\_investment\\_in\\_farmland\\_-\\_No\\_low-hanging\\_fr.PDF](https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD000000000480280/Foreign_investment_in_farmland_-_No_low-hanging_fr.PDF)

***First, population is increasing faster than in any other region.***

- Currently estimated at 925 million, SSA's population is forecast to reach 1.2 billion in 2025 and 2 billion in 2050 (see chart 7).
- By 2050, one in five people in the world will live in SSA, by 2100 one in three – up from one in 7.6 currently – according to forecasts by the UN (Medium-fertility variant).
- SSA has vast amounts of uncultivated arable land: 200 million hectares, close to half of global availability (see chart 35).
- This means that in Africa, unlike many other parts of the world, there is room for agriculture to expand.
- The African countries with the most significant amounts of uncultivated cropland are displayed in chart 36.

**Bringing additional land into production can be challenging.**

- These areas tend to have very low population densities but some of them are located hours away from the next city and will need major infrastructure development to have easy access to markets.
- In some cases, the environmental cost can be high.
- Most importantly, property usage rights are often unclear.
- There is growing foreign interest in the untapped potential of Africa's fertile land (and water availability).

- Two-thirds of the global farmland area of interest to foreign investors is located in Africa – mostly in Sudan, South Sudan, Mozambique, Tanzania, Ethiopia, Madagascar, Liberia, DRC and Zambia.
- Rights to land and natural resources need to be recognised, clearly defined and enforced.
- In the meantime, investors and governments have to screen investments for responsible practices, in order to maximise opportunities and minimise risks – economic, social and environmental.
- Arrangements with existing land users (see D1 on page 17), to enhance their productivity without transfer of land, is usually the most efficient way to invest

**SSA needs investment in agriculture and agribusiness to ensure efficient and sustainable agricultural production.** This can drive economic growth and poverty reduction in SSA and fulfil both domestic and global demand for agricultural products.

In spite of well-known risks, SSA offers both huge agricultural potential and fast-growing markets. There is increasing investor interest in SSA along the whole food supply chain. Challenges remain in terms of infrastructure, trade, skills and financing but there is increased commitment from governments and other partners for a sector with strong growth opportunities.

**Source: Agricultural value chains in Sub-Saharan Africa. From a development challenge to a business opportunity . Deutsche Bank research. <https://library.unccd.int/Details/books/764>**

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- **Smallholder family farming will surely be central to agriculturally generated growth and employment in most developing country settings.**
  - Smallholders’ relatively intensive use of labour suggests it will have a role in absorbing labour as expanding youth cohorts enter labour markets.
  - The potential of smallholder farming to contribute to agricultural productivity growth is also borne out by historical evidence. It details many instances, particularly in sub-Saharan Africa (examples include Burkina Faso, Ghana and Niger), where substantial increases in marketed output of both food and cash crops have resulted from productivity increases in the smallholder sector, comparing favourably to the performance of countries with significant large-farm sectors (such as Namibia, South Africa and Zimbabwe) (Wiggins, 2009).
  - Larger farming enterprises may present employment opportunities for young rural people.

- By adopting large-scale technologies and innovations, these farms provide economies of scale in some conditions and enable the provision of stable employment.
- To this extent, they may play a role in competing for labour with smaller farms, placing upward pressure on wages. Collier and Dercon (2009), for example, see a future where large farms and smallholders compete in factor markets and cooperate in output markets

**Around 80 per cent of young workers in developing countries are engaged in informal employment (ILO, 2013), significant numbers of them on family farms and in rural areas.**

- In sub-Saharan Africa, for example, 62 per cent of young people work on family farms and a further 22 per cent work in non-farm household enterprises, with only 16 per cent in formal waged employment (World Bank, 2014b).
- The growing labour force coupled with the relatively low base for private-sector non-farm wage employment means that agriculture will continue to be a significant employer for years to come in areas that have not experienced significant rural transformation. This scenario applies, for example, in much of sub-Saharan Africa (IMF, 2013).
- Difficulty accessing land is a major factor inhibiting young people's participation in agricultural activities. The project "Facilitating youth access to agricultural activities",<sup>32</sup> implemented by the International Movement for Catholic Agricultural and Rural Youth (MIJARC) and supported by IFAD and FAO, found that 52 per cent of young farmers identified access to land as among their biggest challenges.
- More than half of the young people surveyed who were not farmers mentioned difficulties in accessing land as being one of the factors preventing them from initiating agricultural activities.

Focus group discussions in Ethiopia among young farmers, non-farming young people, in-school youth and older farmers also stressed that **young people generally have no land of their own and little means of obtaining any**. As a result, they were discouraged from considering agriculture as a potential livelihood option (IDS, 2012).

**Source: IFAD: Youth. Investing in young rural people for sustainable and equitable development** <https://www.ifad.org/en/web/knowledge/publication/asset/39179935>

**Examples /projects and employment cases:**

- **The Government of Namibia has identified land degradation as a serious problem which demands remedial intervention, and recognizes that integrated ecosystem management strategies are needed to effectively address the underlying causes.**

The goal of the Country Pilot Partnership for Integrated Sustainable Land Management (CPP-ISLM) is to work towards combating land degradation by using integrated cross-sectoral approaches, which would enable Namibia to ensure environmental sustainability as well as the protection of dry land ecosystems and their functions.

The IGM component, is a small-scale investment that enhances tangible produce and practical results from the use of natural resources and its products, and/or those that contribute to improved land management.

The grant facility supports community-based projects which target the following:

- Income generating activities linked to sustainable land management that improves livelihoods through job creation.
- Food security and capacity building in ISLM.
- Activities that promote public-private partnerships in ISLM for sustainable livelihoods and activities that preserve and restore biodiversity in areas under greatest land-use pressure.
- Actions improving market access and performance of natural resources and products from improved land management.
- Activities that mainstream biodiversity priorities into land use planning and policy-making

### Some of the projects which have indicated exactly the number of jobs created :

#### **Project number 4.**

Marama Beans Cultivation Project page 8 (• 6 male Permanent workers on the project

- 44 temporary jobs (25 females and 19 males)• 50 beneficiaries from the three plots)

#### **Project number 5.**

Tses Integrated Bio-Systems page 10 (24, Female 12, Male 12 Trained in lurchene planting • 4

Full time employed, 31 temporary employed, Female 5, Male 26 • 31 beneficiaries, of which 5 are female)

#### **Project number 7.**

Community Based Rangeland Management Project page 14(The project members were the Kambekura Farmers Association of which 358 benefited from the project. • 3 temporary jobs were created during the funding period of the project. • 358 beneficiaries of which 51 were women were trained.)

#### **Project number 8.**

Enviro-Chance Enterprise page 16- 3 ( 2 Male and 1 Female), Jobs created • 10 Male (sorting and shredding paper, and selling) • 12 members where trained in paper shredding and business principles)

#### **Project number 11.**

Onaanda Tree Planting Enterprise page 2(• 16 members, mostly youth • 5 temporary jobs created for the installation of the nurseries • 16 beneficiaries of which 7 are female while 20 community members will be trained as TOT in Tree Planting.)

#### **Project number 13.**

Namibia Organic Association page 26(• 20 members of NOA are making a living in organic farming • 12 members have temporary employment as executive committee members • 57 beneficiaries of which 12 are female)

#### **Project number 14.**

Utokota Community Development Enterprise page 28(• 3 currently present, the project started with 12 members, of which 9 have dropped out due to a

lack of income in the project to sustain their livelihoods. • 15 temporary jobs was created for women as marula collectors. • 3 current jam project members with 20 temporary garden workers)

**Project number 20.**

Mangetti Nuts Oil Production Enterprise page 40(• 15 jobs created to women who collect the nuts and sale to the project. • 41 community members benefited through cooking oil sponsorship and buying of nuts from Them)

**Project number 22.**

Ongenga Gardening Project page 44(• 10 project members are employed at the project earning a monthly wage of \$200.00 plus income from fruits sold • 10 temporary workers were employed during the start of the project making it a total to 20 • 20 direct beneficiaries and 60 indirect beneficiaries)

**Source:** UNDP – GEF Innovative grants mechanism (IGM) projects profile

<https://library.unccd.int/Details/books/525>

➤ **Breadbasket initiative begins bearing fruits in northern Ghana**

In northern Ghana, a three year government initiative supported by the Alliance for a Green Revolution in Africa, aims to increase food security and income of around 250,000 smallholder farmers, while creating 15,000 jobs in agriculture-related sectors.

**Source:** <http://www.new-ag.info/en/developments/devitem.php?a=2423>

➤ **Combining timber and NTFPs, Guatemala's forest sector** contributes approximately 2.5% of the GDP. It generates an estimated 37,000 jobs, involving 1.1% of the economically active population (PAFG 2000).

**Source:** Community Forest Enterprise Development in Guatemala

[http://www.commddev.org/userfiles/doc\\_220.pdf](http://www.commddev.org/userfiles/doc_220.pdf)

➤ **Green Jobs for a Revitalized Food and Agriculture Sector**

In this study, two scenarios were set up to analyze the impact that several interventions would have on primary sector employment. These actions include sustainable (more ecologically balanced) management practices (e.g. no-till cultivation, expanded natural fertilization practices), research and development, integrated pest control and rural value-added food processing, but also conservation and reconstruction of forest and fish stocks (through, for instance, afforestation and reforestation as well as fish stock management measures and the expansion of aquaculture) he projected additional agriculture and food employment (that could be considered green if the interventions are implemented correctly) ranges between 1,650-1,730 million in 2050 in GA1 and GA2 (i.e. 8-13% higher than business as usual -BAU; 3% higher than CA1 and CA2 scenarios; and 52-59% above today's level).

Green agriculture jobs tend to rise slowly over time, as more practices are adopted. Net short-term declines in employment are projected for fishery and forestry (in the range of 2 to 5 million jobs), where the effects of reduced production (driven by conservation measures) offset the gains in natural resource management and stock rebuilding.

On the other hand, in the longer term higher natural stocks support the creation of new and additional jobs relative to BAU (in the range of **5 to 15 million jobs**). In particular, adoption of sustainable management practices accounts for 362-630 million of employment gains in CA1 and CA2. The management and preservation of ecosystems and biological diversity has the potential to create employment in combating soil erosion, rehabilitating degraded land, restoring forest reserves, and guarding and management of protected areas, eco-tourism and agro-forestry, etc

..... in the entire EU-27 economy there were **500,000 full-time equivalent jobs in organic farming as of 2000: 300,000 direct (directly engaged in farming)**, 151,000 indirect (indirectly engaged through employment in organic agricultural supply chains), and 48,000 induced (additional jobs generated by the expenditure of incomes earned by direct and indirect labor). Afforestation and reforestation are expected to offer the greatest scope for job creation, particularly where rural unemployment is high and vast tracts of degraded land are available (Nair and Rutt, 2009)

**Source: Green Jobs for a Revitalized Food and Agriculture Sector**

[http://www.fao.org/fileadmin/user\\_upload/sustainability/pdf/FAO\\_green\\_jobs\\_paper\\_March\\_31.pdf](http://www.fao.org/fileadmin/user_upload/sustainability/pdf/FAO_green_jobs_paper_March_31.pdf)

**Next projects in SLM** *did not quote exactly number of jobs, but the employment opportunities are either mentioned or number of households that benefit from the projects.*

- **Sustainable land management Project description/Title:** Sustainable land management  
**Commissioned by:** German Federal Ministry for Economic Cooperation and Development (BMZ)  
**Country:** Ethiopia  
**Lead executing agency:** Ministry of Agriculture (MoA), Ethiopia  
**Overall term:** 2005 to 2014

The project is part of the national Sustainable Land Management Programme and is being implemented jointly with a number of international donors, such as the World Bank, Finland, the EU and Germany. In the three Ethiopian highland areas of Amhara, Oromia and Tigray, people live under the constantly rising threat of food insecurity. More than 50% of the Ethiopians live here.

### **Results achieved so far**

**Approximately 180,000 hectares of degraded land has been made productively usable through sustainable land management practices, including the use of terracing, crop rotation systems, improvement of pastureland and permanent green cover.** These measures are benefiting more than 194,000 households, and are contributing to increased productivity in the affected areas. They are also enhancing the resilience of small-scale agriculture to the effects of

climate change. As well as introducing technologies and measures for erosion protection, the project is fostering the formation of user groups to encourage the sustainable management of water catchment areas. Already, around 60,000 smallholder farmers and small-scale producers are involved in more than 500 user organisations.

**Source:** GIZ Sustainable land management <https://www.giz.de/en/worldwide/18912.html>

➤ **Sustainable Use of Rehabilitated Land for Economic Development (SURED) Project  
Smallholder farmers profit from improved business on rehabilitated and protected  
land**

12,000 additional job equivalents (4,000 women and 3,000 youth) have been created on the basis of using natural resources. <https://www.giz.de/en/downloads/giz2019-en-sured-ethiopia.pdf>

➤ **IFAD has committed US\$71.4 million in loans to Jordan since 1981 to support  
agricultural development and reduce rural poverty.**

The funds have been used in six agricultural development programmes and projects with a total value of US\$189.3 million. The Government of Jordan and project participants have contributed US\$63.2 million.

Jordan is classified as a chronically water-scarce country. Less than 5 per cent of the land is arable. For farmers, little or no rainfall means severely reduced cultivation and production. Not only do poor farmers have fewer products to sell, they also have less to eat. Hunger and food insecurity are constant threats.

About 20 per cent of Jordanians live in rural areas where poverty is more prevalent than in urban areas. Approximately 19 per cent of the rural population is classified as poor. Because of the arid nature of the land, many rural poor people cannot grow enough crops to feed themselves and their families. People who find other ways to supplement their incomes generally earn very little. Regular drought exacerbates the situation

Projects: 7

Total cost: US\$189.3 million

Total loan amount: US\$71.4 million

Directly benefiting: 69,132 households

**Source:** IFAD Enabling the rural poor to overcome poverty in Jordan  
<http://www.ifad.org/operations/projects/regions/pn/factsheets/jo.pdf>

**And more about youth employment opportunities, ecosystems restoration, green jobs..**

- **The World Youth Report: Youth Social Entrepreneurship and the 2030 Agenda** seeks to contribute to the understanding of how youth social entrepreneurship can both support youth development and help accelerate the implementation of the SDGs. To do so, the Report
- first synthesizes the current discussion on social entrepreneurship and anchors it in the context of the 2030 Agenda.
- Chapter 2 of the Report then turns toward the situation of youth and examines whether **youth social entrepreneurship can offer not only employment opportunities**, but also support other elements of youth development such as youth participation.
- In the third chapter, the Report assesses the **potential and the challenges of youth social entrepreneurship** as a tool supporting the 2030 Agenda and youth development in its broadest sense.
- Finally, chapter 4 first examines **how new technologies** can be leveraged to address some challenges faced by young social entrepreneurs as well as further support youth social entrepreneurship in its efforts to advance sustainable development. This last chapter finally offers policy guidance to build enabling, responsive and sustainable national ecosystems for young social entrepreneurs.

Throughout the report, info boxes and case studies illustrate the impact youth social entrepreneurship can have when entrepreneurial ecosystems are aligned with the needs, characteristics, constraints and ambitions of young people.

**Source:** [The World Youth Report: Youth Social Entrepreneurship and the 2030 Agenda](https://library.unccd.int/Details/fullCatalogue/1508)  
<https://library.unccd.int/Details/fullCatalogue/1508>

### ➤ **Estimating the Size and Impact of the Ecological Restoration Economy**

Domestic public debate continues over the economic impacts of environmental regulations that require environmental restoration. This debate has occurred in the absence of broad-scale empirical research on economic output and employment resulting from environmental restoration, restoration-related conservation, and mitigation actions — the activities that are part of what we term the “restoration economy.”

In this article, the authors provide a high-level accounting of the **size and scope of the restoration economy in terms of employment, value added, and overall economic output on a national scale**. They conducted a national survey of businesses that participate in restoration work in order to estimate the total sales and number of jobs directly associated with the restoration economy, and to provide a profile of this nascent sector in terms of type of restoration work, industrial classification, workforce needs, and growth potential. They use survey results as inputs into a national input-output model (IMPLAN 3.1) in order to estimate the indirect and induced economic impacts of restoration activities. Based on this analysis the authors conclude that the domestic ecological restoration sector directly employs ~ 126,000

workers and generates ~ \$9.5 billion in economic output (sales) annually. This activity supports an additional 95,000 jobs and \$15 billion in economic output through indirect (business-to-business) linkages and increased household spending.

**Source:** Estimating the Size and Impact of the Ecological Restoration Economy

<https://library.unccd.int/Details/fullCatalogue/200000516>

More about ecosystems restoration (<https://bit.ly/2VIFPdI>) and ecological degradation/restoration (<https://bit.ly/3gnBC7c>) from our collection

➤ **The post-pandemic planet: Will our relationship with the natural world really change?**

Leading economists such as Nobel laureate Joseph Stiglitz and Nicholas Stern have found that green recovery packages would offer much higher rates of return, more short-term jobs, and superior long-term cost savings than traditional fiscal stimulus. **For example, building clean-energy infrastructure – a particularly labor-intensive activity – would create twice as many jobs per dollar as fossil-fuel investments.**

Other priorities include investment in natural capital, such as large-scale restoration of forest ecosystems. This would yield many valuable benefits, ranging from bolstering biodiversity and mitigating floods to absorbing carbon dioxide from the atmosphere. To complement such efforts, banks and other financial entities should be held responsible for lending practices that fuel the nature and climate crises.

Some decision-makers recognize this imperative. The International Monetary Fund has published broad guidance for a green recovery, and IMF Managing Director Kristalina Georgieva has called for environmental conditions to be attached to corporate bailouts. The French government is already pursuing such an approach.

**Source :** WEF <https://www.weforum.org/agenda/2020/06/planet-pandemic-environment-nature-coronavirus-covid19>

➤ **Job creation during the global energy transition towards 100% renewable power system by 2050**

Aside from reducing the energy sector's negative impacts on the environment, renewable power generation technologies are creating new wealth and becoming important job creators for the 21st century. Employment creation over the duration of the global energy transition is an important aspect to explore, which could have policy ramifications around the world. This research focuses on the employment impact of an accelerated uptake of renewable electricity generation that sees the world derive 100% of its electricity from renewable sources by 2050, in order to meet the goals set by the Paris Agreement. An analytical job creation assessment for

the global power sector from 2015 to 2050 is estimated and presented on a regional basis. **It is found that the global direct jobs associated with the electricity sector increases from about 21 million in 2015 to nearly 35 million in 2050.** Solar PV, batteries and wind power are the major job creating technologies during the energy transition from 2015 to 2050. This is the first global study presenting job creation projections for energy storage. The results indicate that a global energy transition will have an overall positive impact on the future stability and growth of economies around the world.

**Source:**

<https://www.researchgate.net/publication/334359425> Job creation during the global energy transition towards 100 renewable power system by 2050

➤ **The role of young farmers in the sustainable development of the agricultural sector**

This article addresses the issue of the role of young farmers in sustainable agriculture development as statistical data presented in the National Reform Programme reveal that a relatively high proportion of **young people aged between 24 and 44, are engaged in agriculture.** This situation is caused by the fact that no other sources of income, rural youth remain in the communities they belong to help with farming. **Renewal generation of farm managers is becoming a necessity in the agricultural sector,** resulting in both improved competitiveness, as well as improving the social life of rural communities. Younger generation of farmers can more easily meet the demands that society require the profession of farming, and those required by the regulations of the Common Agricultural Policy: food safety, hygiene and animal welfare, diversification, local products of superior quality, awareness the role that agriculture plays in combating climate change (renewable energy, biodiversity, reducing carbon dioxide emissions), **creating jobs and economic growth in rural areas,** awareness of the negative effects caused by farmland abandonment. Young farmers also promotes a wide range of activities (rural tourism, preservation of traditions and cultural heritage), participate in local associations.

**Source:**

<https://www.researchgate.net/publication/293279013> The role of young farmers in the sustainable development of the agricultural sector

➤ **Youth employment in least developed countries: The contribution of sustainable agriculture**

Youth unemployment and underemployment are serious concerns in both developing and developed economies. In spite of the continuing efforts of governments, youth unemployment rates still remain high and intractable in many countries. The problem of youth unemployment is particularly acute in the Least Developed Countries (LDCs) where fertility remains high and the proportion of young people in the population is expected to continue to rise for the better part of this century. Most of the youth in LDCs live in rural areas where agricultural and non-

farm activities are currently unable to provide the quantity and quality of jobs to meet their employment demands. Given the weak structural transformation in many LDCs, **there is little formal employment in industry and more than two-thirds of the population are still engaged in agriculture**. The informal sector is a major source of employment, but low productivity and earnings in the sector have created a huge reservoir of young people who are working poor. There is therefore a strong case to promote aggressive agricultural development in order to provide the engine for growth which can create the required jobs for young people. However, this strategy must take into consideration several converging threats - from population growth, climate change and the unsustainable use of resources - which are steadily intensifying pressure on people and governments around the world to transform the way food is produced, distributed and consumed. This chapter asserts that the multifunctionality of agriculture, in particular sustainable agriculture, not only addresses these converging threats directly but provides an important means of creating productive and decent jobs for young people in LDCs. "Sustainable agriculture lies at the heart of delivering poverty reduction" (Beddington et al., 2011, p. 6).

**Source:**

[https://www.researchgate.net/publication/291121227 Youth employment in least developed countries The contribution of sustainable agriculture](https://www.researchgate.net/publication/291121227_Youth_employment_in_least_developed_countries_The_contribution_of_sustainable_agriculture)

#### ➤ **Green jobs and decent work: An agenda for sustainable agriculture in India**

The paper seeks to explore the **opportunities created by climate change and mitigation efforts in agriculture sector in India for creating more, newer and better jobs**. These new jobs which are termed as green jobs are not always going to be decent jobs and there is also uncertainty about the number of jobs so created vis-à-vis number of jobs destroyed in traditional fossil fuel based economy. Pivotal role played by agriculture in developing country's economy makes it ideal sector to study in this context. There is growing consensus that organic, sustainable agricultural practices can provide synergistic benefits that include adaptation and mitigation of climate change with addressing concerns like livelihood, employment and working conditions. In an emerging country like India, sustainable agriculture can help in meeting twin challenges of food security and job creation. This so called Double Dividend can positively affect the thinking of policy makers and public at large towards contributing to meeting of mitigation and adaptation challenge with respect to climate change. However, this requires close integration of agricultural, environmental and labour policy. The present study is based on extensive literature survey and expert interaction. Paper seeks to integrate these varied factors and it is argued that emphasis on **sustainable/organic farming will create more and better jobs in India** and help in poverty reduction and improving life standards.

**Source:**

[https://www.researchgate.net/publication/254459826 Green jobs and decent work An agenda for sustainable agriculture in India](https://www.researchgate.net/publication/254459826_Green_jobs_and_decent_work_An_agenda_for_sustainable_agriculture_in_India)

#### ➤ **Perspectives of development of green jobs in Bulgaria**

The transformation to green sectors of the economy in Bulgaria leads after it **the need of new type of professions**, which would be capable to cope with the new conditions and requirements which different businesses are facing. The knowledge of creation of green jobs in Bulgaria is insufficient, which makes this paper state of art. Green jobs in Bulgaria are connected with transfer of business activities to green ones. The paper analyzes and evaluates the current conditions of creation of green jobs in Bulgaria. It is proposed analysis of the requirements in Bulgaria about the eligible criteria to apply for funding under the measurement of green jobs; based on research SWOT analysis of creation of green jobs. The results are systematized in findings, conclusions and policy recommendations, as changing conditions of applying to measurement, payment connected to employees, and etc. As well is proposed cooperation between other existing measurements for reaching sustainable employment in Bulgaria.

**Source:**

[https://www.researchgate.net/publication/282852876\\_Perspectives\\_of\\_development\\_of\\_green\\_jobs\\_in\\_Bulgaria](https://www.researchgate.net/publication/282852876_Perspectives_of_development_of_green_jobs_in_Bulgaria)

### ➤ **Green Jobs and Policy Measures for a Sustainable Agriculture**

This paper explores the **green agriculture as a pivotal issue in the 21st century and assigns it a key role in fostering social development and sustainability**. In fact, a more sustainable agriculture makes food security possible, particularly in developing countries. This study follows the following structure. The first paragraph investigates the issues and the opportunities connected to today's global agriculture sector, including forestry and fisheries. In this context we will see the potential underlying **sustainable agriculture in creating green jobs**, and special emphasis will be devoted to the analysis of green farming practices. This includes the rehabilitation of degraded crop and the role played by pasture land in improving agro-ecological farming practices. In the second paragraph, special emphasis will be devoted to the analysis of green farming practices. **This means: a) the introduction of technologies that mechanize farming operations so that agricultural productivity will significantly increase; b) improvements of transport infrastructures and facilities in reducing post harvest losses; c) the certification and branding for a sustainable production**. The third paragraph focuses on the policy measures that are needed to put in place a sustainable agriculture. In fact, for this to happen it is necessary that governments, particularly in developing countries, pay attention to programs for environmental conservation and rehabilitation and to the creation of green jobs. The policy options analyzed for intervention in this sector include both financial and regulatory measures, such as subsidies, taxes, public R&D, international assistance and regulated standards, as well as marketing processes (e.g., eco-labeling and certification programs).

**Source:**

[https://www.researchgate.net/publication/295841321\\_Green\\_Jobs\\_and\\_Policy\\_Measures\\_for\\_a\\_Sustainable\\_Agriculture](https://www.researchgate.net/publication/295841321_Green_Jobs_and_Policy_Measures_for_a_Sustainable_Agriculture)

### ➤ **Women's Labour and Sustainable Agriculture**

This article looks at the **participation of women in irrigated agriculture in 32 districts of Tamil Nadu** and found exceptional involvement in these three districts, which are topographically different from each other, namely Kanyakumari, Nilgiris and South Arcot. The study asked— how does contemporary agriculture support female participation and in turn how does this keep agricultural labour supply and food security sustainable? A range of research methods were used to explore the rationale for exceptional female participation in irrigated agriculture. It concluded that **such participation arises because of the existing pattern of labour supply primarily by landowning farm women and labourers**. This as a result of male preference for widespread skilled jobs, subsequent changing labour pattern due to male migration, matrilineal property ownership, cropping intensity, multi-tasking of women and the coordinated effort of women's groups (SHGs) in accessing micro-credits. Finally, subsidies and incentives have further altered and effected greater labour supply of women in agriculture.

**Source:**

[https://www.researchgate.net/publication/336794292 Women's Labour and Sustainable Agriculture](https://www.researchgate.net/publication/336794292_Women's_Labour_and_Sustainable_Agriculture)

**Prepared by UNCCD library**

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