

Implementing World Bank Jobs Agenda in Agriculture Projects

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Acknowledgments

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Implementing World Bank Jobs Agenda in Agriculture Projects

Highlights

- Agricultural value chains provide a large majority of the employment opportunities in low- and lower-middle-income countries, so Bank-supported agricultural projects are instrumental in supporting client country and Bank jobs agendas.
- This role has often not been explicitly recognized in Bank-supported agricultural projects, especially those focused on raising productivity in on-farm economic activities. As a result, the potential contribution of these projects to improving jobs outcomes - a key driver of economic transformation, poverty reduction, and shared prosperity - is not recognized and may not be maximized.
- Measuring and monitoring the effects of Bank-supported agricultural projects on the quantity and quality of jobs is not difficult, although challenges exist. The Bank has developed a set of tools which TTLs, Project Management Units, and contractors can use at all stages of project preparation and implementation.
- This note discusses why focusing explicitly on employment outcomes is important, and provides suggestions on how this focus can be made operational.

1. Jobs are instrumental to both economic development, and the Bank's twin goals of poverty reduction and shared prosperity

World Bank projects support country economic development through shared prosperity – a sustainable reduction in poverty and improvement in welfare for the poorest half of the population. Increases in earned incomes from employment is the main channel through which this happens. In most cases, poor households work themselves out of poverty, as labor is the most important asset of the poor. Better employment opportunities are, therefore, a desired outcome of most economic development program and project interventions.

The link between employment opportunities and shared prosperity is recognized in multiple strategies and commitments at the Bank. Job creation and improvement has become a corporate priority recognized through a Corporate Results Indicator: *Number of project beneficiaries reached by jobs-focused WBG interventions*. The Bank's commitment to creating better employment opportunities was strengthened through the [Jobs and Economic Transformation \(JET\) framework for IDA19](#), and is supported institutionally by the Jobs Group. Importantly, the JET framework recognizes the particular importance of improving opportunities in poor countries where, owing to nascent economic transformation, most of the labor force has to be engaged in self- and family employment on and off the farm (Fox & Gandhi, 2021; Townsend et. al, 2017).

Bank-supported agricultural projects play an important role in supporting country progress toward shared prosperity through increased income from employment, especially in low- and lower-income countries owing to the large share of employment found within agricultural value chains. According to Townsend et al., (2017), the food system employs the majority of people in developing countries, and “will continue to do so during the time period set to achieve the Sustainable Development Goals and thereafter” (p.4). In West Africa, agricultural value chains accounted for about two-thirds of total employment (Allen et al., 2018). While most food system employment is found on the farm in

low-income countries, agro-processing enterprises deliver a significant share of manufacturing output and employment.

Support is provided through three main types of projects.

1. *Projects targeting on-farm productivity* - projects designed to improve the volume and value of production by farmers, usually through a combination of research, development, and extension/capacity building, as well as improvements in rural infrastructure (transportation, irrigation, storage, and logistics, etc.). The main outcome sought from these projects is an increase in land productivity (volume produced per hectare).
2. *Value chain projects* - projects designed to deepen agribusiness value chains through enhancing the competitiveness of value addition activities that either process agricultural sector production or provide services and inputs needed to increase the productivity of agricultural sector activities (often called supply and demand-side projects). The main outcomes sought from these projects is both an increase in volume and quality of agricultural products suitable for processing per hectare and/or export, and an increase in the value-added post-harvest of key crops (e.g., roasted cashews, packaged vegetables, pressed oilseeds).
3. *Projects which help targeted groups (e.g., refugees, youth) enter farming as an economic activity.* The Bank does few of these projects; the main outcome sought is often resettlement, including access to land and inputs.

All types of projects to contribute to the Bank's Jobs agenda by improving key jobs outcomes – *earnings and employment quality* - for beneficiaries. But often these contributions are not adequately recognized, measured, and monitored. This is an issue for country strategy and the CPF, as project contributions to better employment opportunities - a key link in the strategic theory of change leading to shared prosperity – are not tracked effectively. But more importantly, client countries, especially in Africa where the labor force is growing rapidly, have their own jobs agendas (which the Bank is keen to support) and they need to measure and monitor progress toward creating better employment opportunities.

The purpose of this Note is to support task managers in addressing these jobs issues within their crop agricultural projects.¹ This Note covers:

- (i) the channels through which growth and development in crop agriculture affect jobs outcomes and why these are important for both sector and national economic development;
- (ii) the possible types of jobs outcomes and how these are realized and measured in the agricultural sector;
- (iii) how these job outcomes can be identified monitored throughout project development and implementation.

2. Agricultural value chain development from farm to fork sustains the JET agenda

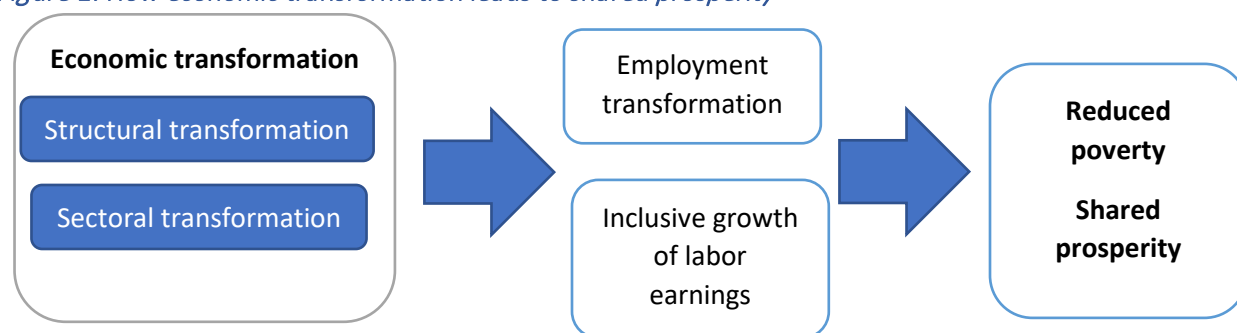
It is widely agreed that the expansion of better income earning opportunities depends on progress in *economic transformation*. Economic transformation refers to two linked development processes: (i) *structural transformation* – the shift of workers and resources from low-productivity, low-earning sectors such as traditional agriculture to higher-productivity sectors through the more rapid entry and growth of firms in the higher-productivity sectors; and (ii) *sectoral transformation* – the growth

¹ This note does not cover Jobs issues and outcomes in livestock projects.

of productivity within sectors, especially the lower-productivity ones. *Growth of labor productivity on family farms (sectoral transformation) is thus an essential element of economic transformation.* Economic transformation reflects both the use of new technology (e.g., biological, mechanical, digital, and management technology) to lower the costs of production and to increase the diversity and the sophistication of what is produced, and improved allocation of resources (physical resources, including land, human, and financial resources) to higher productivity uses within the economy. Bank country programs support economic transformation by helping client governments stimulate private investment in productive capacity – on the farm, off the farm as part of an integrated value chain, and in nonfarm sectors such as manufacturing, construction, and services.

Economic transformation means that a higher share of production takes place in firms, and a lower share in production by households. It also means that both firms and household production become more productive, and in the case of family farming, more commercialized. Economic transformation enables the growth of labor earnings in the economy (including in on-farm activities) as well as employment *transformation*: a shift in the share of employment from self- and family-employment in household farms and microbusinesses to wage employment in private firms (or the public sector). This shift occurs when wage jobs grow faster than the labor force, pulling new entrants and others in the labor force into these jobs. Formal wage jobs are preferred by most in the labor force, as they have a lower level of income risk than self- and family-employment on family farms and in the nonfarm informal sector, and usually offer access to social protection (ILO, 2021). Job-creating private investment is therefore [a desired and expected outcome](#) of many World Bank productive sector development projects. It should be noted, however, that even as economic transformation is taking place, the absolute size of informal employment, including agricultural employment, will increase for quite some time.² Farm earnings, therefore, need to continue to grow throughout the transformation process to achieve shared prosperity.

Figure 1: How economic transformation leads to shared prosperity



Although economic transformation means that the agricultural the share of output and employment contributed by *on farm production* will decline, labor and total factor productivity improvements in the agricultural sector are nonetheless critical for economic and employment transformation. In most low- and lower-middle income countries the absolute number of people working on the farm will continue to rise, even as agriculture’s share of employment hours worked declines. This is especially true in Africa, where a sluggish demographic transition is expected to result in strong labor force growth for decades (Fox and Gandhi, 2021). This labor force growth – which will be mostly young people - cannot all be absorbed by the nonagricultural sectors, as there is simply not enough

² See Timmer, (1988), for a discussion.

demand.³ Many of these youth will need to work at farming. This means that raising on-farm labor productivity and earnings is critical.⁴

In poor countries still in their early stages of transformation, increasing output and earnings in agriculture accelerates transformation. More than four decades ago, Johnston and Mellor (1961) described how this comes about: improvements in agricultural productivity release resources to other sectors, raise the nutritional status of workers, lower the costs of raw materials for industry, earn foreign exchange, and increase the demand for other sectors' outputs. More recent research has confirmed that raising farm incomes through increased agricultural productivity creates purchasing power that stimulates employment and output growth in non-farm sectors, especially in value-added food chains and non-tradable goods and services (Christiaensen *et al.*, 2011). Because of these widely shared income and employment effects, output and productivity growth in agriculture has reduced poverty more so than growth in other economic sectors in the earlier stages of economic transformation (Ivanic & Martin, 2018; Beegle and Christiaensen, 2019), which is why support for increased productivity in on-farm activities has long been a core part of Bank group activities.

Recent research has identified the importance of robust value chains as critical to the process of economic transformation. A value chain describes the “full range of activities required to bring a good or service from conception, through different stages of production, to delivery to consumers and finally, to disposal after use”.⁵ It reflects the interdependence of innovation, design, production, and distribution activities in an economy. A value chain approach has proved particularly important in promoting the transformation of the agricultural sector, because bottlenecks in one part of the value chain (e.g., input supply, transportation, distribution, or sales) can frustrate efforts to improve on-farm productivity and earnings, and slow down rural transformation. Farmers know that supply does not create its own demand – the journey from farm to fork can be a long one. Development of value chains is recognized as the link between competitiveness and productivity on one hand, and employment and earnings opportunities on the other – in other words, the link between dynamism in primary production and shared prosperity.

In sum, LICs and LMICs, especially in Africa, need both agribusiness value chain interventions to create new off-farm employment opportunities in the formal and informal sectors, as well as projects to increase earnings on the farm, to realize the twin goals of poverty reduction and shared prosperity.

³ See, for example the analysis in Merotto, D., *Jobs Strategy for Inclusive Growth in Uganda*. World Bank

⁴ Other key actions to support youth employment in agriculture in Africa include strengthening land markets. See Chapter 4 in Filmer and Fox (2014).

⁵ See <https://www.jobsanddevelopment.org/wp-content/uploads/2018/07/Value-Chain-Guidance-Note.pdf>

Box 1: What does it mean to be working informally?

The ILO has issued clear criteria (statistical standards) to identify informality as an employment outcome. These standards have two parts (i) people who are in informal production units (the informal sector); a production-unit based concept; and (ii) people who are employed informally, in either a formal or an informal production unit; a job-based concept.

(i) *The informal sector* consists of production units that are not constituted as separate legal entities independently of their owners (they do business in the owners' name, and usually do not have a separate bank account for the business). They are owned by individual household members or several members of the same or different households. Typically, they operate at a low level of organization and on a small scale. Earnings depend on income after costs of production; they are commonly called "nonwage earnings" or gross profits. They may be farm or nonfarm production units.

(ii) *Informal employment* includes employees (people who work for a wage for someone who is not a member of their family) who (legally or illegally) are not subject to national labor protection legislation, income taxation, social protection, or entitled to certain employment benefits (advance notice of dismissal, severance pay, paid annual or sick leave, etc.). In some countries, farm wage workers are exempt from labor protection legislation, so they would be legally informally employed. On the other hand, owners of large and small businesses often illegally employ wage workers informally, as they do not want to conform to national labor legislation.

As countries get richer, the share of employment in the informal sector declines. This happens mostly by the creation and growth of new modern firms. Rarely do informal production units formalize. As family farms commercialize, they may take on more of the characteristics of a formal firm; particularly in the agricultural sector informality/formality is a spectrum, not two exclusive categories.

Informal employment is an important source of household income in most Bank client countries. It is very unusual to find formal wage employment constituting more than 50 percent of total employment in low and lower-middle income countries (Fox and Kaul, 2019).

3. What jobs outcomes are supported in Bank agricultural projects?

Bank-supported agricultural projects support two main types of jobs outcomes within agricultural value chains:

- *New employment creation.* This could be on the farm (a young person enters the labor force and starts farming), or off the farm, through an expansion production capability (a new processing business starts and hires labor, or more workers are hired at an existing product storage facility).
- *Increases in the quality of existing employment.* This could be (i) an increase in earnings from existing work on the farm through the use of new technology or increase in the value of production per hectare through enhanced use of irrigation (allowing more productive months of work per year); (ii) an increase in the stability of earnings through adoption of climate risk insurance or new, weather-resilient crop varieties or the increased use of formal labor contracts in wage employment; or (iii) increased health and safety on the job.

Bank-supported agricultural projects often *indirectly* support both outcomes outside of agricultural value chains as well. An example would be the introduction of technology allowing family labor to reduce their time in on-farm work and increase their time in rural non-farm activities such as retail trade in household necessities or the provision of personal services such as hair dressing.⁶

⁶ See World Bank, (2017), for a discussion on the linkages between the farm and nonfarm economies.

Owing to the dominance of self-and family employment throughout agricultural value chains, and across the production spectrum in rural areas and town, identifying these direct and indirect outcomes within a project setting can be challenging. However, recent improvements in statistical tools for measuring employment outcomes, as well as in national statistical capacity in low-income countries, has increased the options available to Bank project design and supervision teams and national project management units (PMUs).

In World Bank terms, a “job” is defined as *an activity that generates actual income, monetary or in kind, and that does not violate fundamental rights and principles at work* (WDR 2013). In mental models, a job is often associated with formal wage employment. But in middle- and low-income countries other types of jobs are most common, including informal wage employment, farm-related work, or own-account nonfarm work.

The Bank has developed a set of definitions and tools for identifying, measuring, monitoring, and evaluating jobs outcomes in projects. These are based on the statistical standards set by UN agencies for measuring and monitoring employment outcomes. A summary is provided below, for more information see the Bank’s [Jobs Monitoring Framework](#).

- *Employment*. In statistical terms, someone is employed if they are engaged in an economic activity that produces a good or service designated for sale.
- *Unemployment*. If someone is not employed, they may be actively looking for work, and in this case they are unemployed.⁷
- *Labor force participation (LFP)*. The labor force consists of people employed or unemployed. Anyone who is neither employed nor unemployed is out of the labor force (OLF) – a nonparticipant.
- *Earnings* is pay or profit, in cash or in kind, from work (per hour, day, or month). It is one measure of job quality.
- *Other dimensions of job quality*: (i) a formal contract (providing earnings stability and security); (ii) access to work-related social protection (such as unemployment insurance or a pension); (iii) protection from health and safety issues at work; and (iv) protection from forced labor, harassment, or discrimination.⁸
- *Underemployment is working fewer hours than desired and available*. In the agricultural sector seasonal inactivity is common. Underemployment may also reflect involuntary part-time work in nonfarm parts of the value chain.

Employment is conventionally defined over a one-week period. Thus, a farmer who harvests one week, sells output the next, and then stops working for two weeks or more as the season is over would be considered OLF during the post-harvest, post-sale period unless they were actively seeking another employment opportunity. In rural areas, offseason employment opportunities may be scarce. Thus, *underemployment* is chronic in farm households without investments that allow economic activity all year. Examples of such investments would be: (i) irrigation, greenhouses, etc., which permit more crop seasons, or (ii) adding livestock, which is a year around activity. Farm households often invest in a nonfarm business which they operate primarily in the off season – a phenomenon known as “pluriactivity” or “multiple livelihoods”.

Some people may be OLF more permanently (e.g., all year). Many people who are OLF actually want to work, but face constraints. Often women and youth do not participate in the labor force at all

⁷ Note that unemployment requires an active job search, not just inactivity.

⁸ These measures of job quality are often referred to as “decent work”. See ILO (2021).

because they cannot access employment opportunities so they do not actively seek work. Constraints to LFP for women include the burden of household chores, subsistence food production, and caring for others, or an inability to access land or capital to engage in productive self-employment. Projects can help alleviate these constraints.

The ultimate goal of World Bank agricultural projects is to increase value creation on and off the farm. As noted above, this almost always results in an employment outcome.

- On the farm, value creation is enhanced by increasing the productivity of the factors of production used on the farm. While most of the focus in project design is on increasing land productivity – because in most countries land is the scarce resource – the ultimate goal is to increase farmer earnings. Whatever non-labor production inputs the project is promoting (seeds, fertilizer or other inputs, irrigation or other methods of water management, mechanization, new farming methods), if these do not result in higher farmer earnings, they will not be adopted and the project will not be a success. This is recognized in the economic and financial analysis conducted as part of project design and appraisal.
- Post-harvest, value creation is enhanced through investments in storage and/or processing as well as technology transfer supported by the project, often complemented by infrastructure investments such as rural roads (to lower transport costs).

Job outcomes are therefore critical to the success of Bank-supported agricultural projects project interventions. Individuals and households who are direct or indirect beneficiaries of World Bank agricultural projects may experience positive or negative jobs outcomes as a result of project interventions. It is important that these be identified at early stages of project preparation so that they can be monitored.

To track jobs outcomes, the Bank has developed the category of “Jobs Operations”. A “Jobs Operation” is a WB lending activity that has *an explicitly stated and substantive link to creating jobs, improving the quality of existing jobs, and helping individuals connect to jobs or move to better jobs*. This means that activities are selected or designed with a focus on jobs or on addressing a jobs challenge. Not all agricultural projects are jobs operations, but most are, and designating them as such would help the Bank track progress on this key priority.

4. Identifying jobs outcomes during Bank-supported agricultural projects project preparation

Given the importance of jobs outcomes to both higher level objectives within Bank’s country strategy – the Country Partnership Framework – and to transformation of the agricultural sector, jobs outcomes opportunities and targets should be considered, identified, explicitly stated, refined, and measured at all stages of project preparation: sector and problem diagnosis, analysis and selection of intervention options (project design), economic and financial analysis of intervention costs and benefits (with disaggregation by beneficiary type), and implementation planning including monitoring and evaluation. They should be specified in both the theory of change and the PDO (including indicators). This is good practice, and will allow tracking outcomes through to project completion.

Current practice with respect to *farm-level interventions* is to *implicitly* identify project jobs outcomes in Theories of Change as *productivity*, and *measure productivity gains only as land productivity* (yields per hectare). Earnings or income gains from increased labor productivity are often mentioned as an ultimate (higher level) outcome. The implicit assumption is that more output per unit of land will produce more income for the farmer. Following current practice, in these projects PDOs usually

include as a results indicator *land productivity* (yields per hectare), and number of farmers benefitting from the project interventions⁹ but they omit the key outcome of higher earnings (job quality). However, the reason land productivity matters is that *farmer labor productivity and earnings are low*, resulting in poor higher level outcomes (impacts) – high rural poverty, low economic welfare, lagging economic transformation. Alternatively, if project interventions do raise land yields but do not result in increased labor productivity and earnings for the farmer, the results will not be sustainable, and therefore will not contribute to the higher-level indicators.¹⁰ For this reason, *expected changes in farm earnings* (net revenues per unit of time) from project interventions for the crops supported *are estimated as part of the project financial analysis. But they should be stated tracked throughout the project.*

Project PDOs and Theories of Change in *value chain projects* also tend to omit job outcomes at the farm level, but increasingly they highlight the new off-farm jobs expected from project-supported investments in downstream value addition. Good practice would be to track both jobs outcomes on the farm and off-farm directly attributable to the project. Note that there could be negative and positive jobs outcomes if jobs in informal processing activities (not supported by the project) are eliminated – as a direct result of project-financed investments in more productive processing plants. Both types of outcomes need to be tracked (see below).

Explicitly identifying and estimating jobs outcomes during project preparation helps to strengthen project economic analysis. Economic analysis aims to estimate the development outcomes and impact to justify a public sector involvement. Improved jobs outcomes (e.g., higher earnings) are a development outcome which can be highlighted in the analysis. They have externalities in the economy, which justifies a public sector involvement.¹¹

Most projects do not track employment outcomes in activities unrelated to agricultural value chains – for example, starting a new nonfarm business activity. Although indirect, these outcomes are often a direct result of project activities, as increased on-farm labor productivity may free up family labor for other income producing activities. It is not recommended that possible indirect jobs outcomes be included in the PDO and tracked with PDO indicators. However, these outcomes may be recognized within the Theories of Change and results chain as part of the causal mechanism leading to the higher-level outcome of reduce rural poverty.¹²

Table 1 identifies the types of job outcomes attributable to interventions in Bank-supported agricultural projects by type of intervention, and provides sample PDOs that explicitly identify these outcomes. It also identifies suggested monitoring indicators, a topic to which we now turn.

5. Measuring and monitoring jobs outcomes

Some sector specialists may find job outcome measurement daunting, especially with respect to on-farm outcomes. However, tools have been developed and tested within the World Bank to measure jobs outcomes which can be used as part of a monitoring program. These tools can be applied at the

⁹ This measure is used for a Corporate Results Indicator – number of farmers adopting new technologies.

¹⁰ Reasons why increased yields might not translate into increased labor productivity or earnings include the cost of the new technology, lack of market for the product, causing a price fall, and the labor intensity of the technology (resulting in lower labor productivity).

¹¹ For a further discussion and methodological guidance, see [Economic Analysis of Jobs Investment Projects](#).

¹² See World Bank (IEG, 2017) for a discussion.

household/farm level (for farm outcomes) or at the business/sectoral level (for value chain jobs outcomes).

In defining which job outcomes to measure and monitor in a project, understanding underlying heterogeneity is key. Most agricultural projects already disaggregate outputs and outcomes by gender in results monitoring frameworks; some also disaggregate by age (youth vs. older adults). In some cases, poorer farmers are targeted in the project and the effectiveness of the targeting is monitored as well. Access to employment and earnings opportunities are often not equal within the household. As a result, it is important to consider and track employment outcomes in a disaggregated manner for individuals in the household who may be direct or indirect beneficiaries of Bank projects.

Projects may also target small and medium enterprises (SMEs), or micro and household enterprises (e.g., microfinance clients). It would be helpful for sector-specific considerations to drive these decisions. However, it is important to recognize that all other things being equal, larger formal businesses tend to create better jobs.

Measuring farm level job outcomes

Most Bank client countries regularly collect data at the farm level for the purposes of tracking sector progress, and diagnosing challenges. Measuring farm level outcomes is generally done through sample surveys, either national household income and expenditure surveys, or specialized farm surveys such as agricultural censuses. These data should contain information on job-related outcomes. National data are usually used during project preparation, for sector diagnosis (as described in the sector and institutional context section of the PAD), as well as for the required technical, economic, and financial analysis. Additional, specialized data may also be collected during project preparation, using trust funds, PPFs or other funding sources.

Bank agricultural projects regularly monitor on-farm outcomes (e.g., yields per hectare), usually at baseline, midterm, and project end. It is critical *that baseline indicator measurement is done before the project begins*. Measure of employment outcomes, such as hours worked and earnings, can be done at the same time as baseline indicators are collected on yields per hectare.

- *Collecting data on LFP and employment.* Individuals in farm households often undertake different employment activities at different times of the year. It is helpful to collect data on the labor calendar of individuals – data on the extent of participation, employment, and underemployment. *Full Time Equivalent (FTE)* is a useful measure – it recognizes that hours vary substantially, and allows aggregation over the year and across individuals. Qualitative information on what drives the labor calendar of individuals and why it shifts is important, and can be gathered at baseline and project end. For example, Bank research discovered that a land registration project in Ghana allowed women to devote more time to higher-earning non-farm activities (Agyei-Holmes, 2020).
- *Collecting data on labor earnings.* Farm households may have multiple income sources (including unearned income such as transfers from urban relatives, repayments of loans to family or friends, etc.). Projects do not need to track all these sources. The key variable should be earnings from the crop agriculture activity(s) the project is promoting (divided by hours worked growing the crop or crops). Ideally, this would be the value of sales of each crop less the cost of inputs, divided by the labor input of the farmer (output per unit of labor). If a farm has multiple plots and crops, it could be difficult to collect these data. Project teams can explore using substitutes such as revenue per plot (using average farmgate price) divided by average hours worked per plot.

- *Collecting data on job quality.* Measuring beneficiary satisfaction using qualitative surveys is a regular part of Bank project monitoring. This data collection can include measures of perceived job quality among beneficiaries, including income stability and risk, satisfaction with earnings gains (if any) and with overall opportunities.

Measuring concepts such as farm labor input and net revenues per plot requires specialized instruments. The Bank's Living Standards Measurement (LSMS) Team has devoted much of the last ten years to survey research to identify effective techniques to do this.¹³ These techniques are now in use by many national statistics offices (NSOs) in Bank client countries. A review of what data collection instruments are already in use in country – using local languages and terminology, with survey manuals adapted to local settings, can be done early in project preparation. It is sometimes possible to work with NSOs to incorporate needed project monitoring into national statistical programs. If consultants are hired to collect additional data, working with instruments tested and validated by NSOs is advisable.

Finally, project monitoring plans are expected to set targets (at the minimum, for endline results analysis). These can be estimated during the economic and financial analysis based on the farm modeling techniques used. However, qualitative research to detect underlying behavioral trends and preferences, (e.g., focus groups) may be needed at midterm to check the validity of the assumptions underlying the models guide any necessary revisions of monitoring indicators.

Measuring value chain project outcomes

The starting point for the design of a value chain project is the value chain survey, which measures and maps the value added at each processing stage, from raw material to consumer. This involves use of farm and firm (enterprise) survey data, as well as conducting specialized surveys of firms in the sector. This background work should help uncover, for each production stage off-farm: (i) industry structure - how many firms there are, what is the cost structure of the firms, and how competitive they are (including a distribution of productivity); and (ii) where the jobs are, compared to the value added. The Bank's Trade and Competitiveness (T & C) GP is the lead unit supporting these types of studies. Together with the Jobs Group, they have developed toolkits for this analysis, including a [toolkit on measuring baseline employment by demographic and occupation](#). This toolkit includes simplified instruments for collecting employment data from enterprises as well as commercial farms.

Depending upon the industry, value chain survey data may be collected on only a sample of firms in the industry, or on all firms. For industries with a large number of SME wholesalers and processors, collecting data on a sample of firms is necessary, but this can be challenging as the total universe of firms may not be known. It may be necessary to combine enterprise data collected by the national statistics office, with household survey which includes a nonfarm enterprise module to get a statistical picture of the relevant subsector.

¹³ See <https://www.worldbank.org/en/programs/lsmis/initiatives/lsmis-isa>, as well as these reference materials available on the site: <https://documents1.worldbank.org/curated/en/658231560260668780/pdf/Employment-Data-in-Household-Surveys-Taking-Stock-Looking-Ahead.pdf?deliveryName=DM120829> and <https://documents1.worldbank.org/curated/en/336141630489348107/pdf/Employment-and-Own-Use-Production-in-Household-Surveys-A-Practical-Guide-for-Measuring-Labor.pdf?deliveryName=DM120829>. Survey instruments and resources are also available on the website of [the 50 x 20320 project](#) (the Bank is a partner).

Even if detailed data are only collected on a sample of firms, it is important to collect and monitor baseline and endline data on total employment, at all value chain stages, for the following reasons.¹⁴

- In a dynamic and growing industry, existing firms may grow sales and employment, shrink sales and employment, or even exit the industry entirely. New firms may enter. The result of this process could be an increase or decrease in the number of firms, with a positive, negative, or zero effect on employment.
- If the industry has low labor productivity at the outset, the needed intervention could be substituting capital for labor (or simply adding capital). This intervention would increase competitiveness but not create any jobs directly; indeed jobs could be lost.
- The project may not include all firms in the industry. Project beneficiary firms might increase sales and employment, but mostly by taking business away from firms not participating in the project. If the project only monitors employment outcomes in the firms benefitting from the project, project outcome data could end up overestimating employment outcomes.

When collecting and aggregating employment data for each stage of the value chain, it is good practice to use the FTE concept (described above). Wage jobs within the off-farm parts of the value chain may be as seasonal as the harvest itself is. Unless a processor is storing the production of, for example, a tree crop which has only one harvest a year (e.g., fruits or nuts), newly created processing jobs in factories supported by the project would not provide year-around employment.¹⁵ The quality of jobs created would therefore be lower.

Manufacturing (including agro-processing) has become more capital intensive over time as machines are invented which perform tasks more consistently than workers. Export manufacturing industries, as well as import-competing ones, have to adopt this technology in order to meet consumers' quality standards. As a result, it is possible that a value chain intervention could result in negative employment outcomes at the processing stage (while substantially benefitting small-holder farmers supplying the raw material). Projects need to consider the possibility of such negative employment outcomes at the design stage. If either a mass-layoff event or factory closure appears likely or even possible in the industry, project design would need to include measures to mitigate some of the negative effects on existing employees (e.g., severance pay, job search assistance).

Box 2: Challenges in measuring "Jobs Created" in a value chain project - The Cote d'Ivoire Cashew Competitiveness Project

A final point on measuring jobs outcomes – reporting bias. It is not uncommon for value chain projects to depend on the financial intermediaries providing credit for new investments to collect employment data, or the PMU itself to request these data from participating firms and collate it. When beneficiary firms know that creating jobs is a key objective of a project, they will report this outcome- or over-report it. In his analysis of the outcomes of the Nigerian business plan competition, David McKenzie (2015) surveyed winning firms on a number of variables, including employment creation. He compared the amounts reported on his survey with the amounts firms reported to program administrators in the forms they filed to receive tranche payments. Based on his survey data, he concluded that the winning firms would have no trouble meeting the job

¹⁴ Sources for data on total employment include enterprise surveys (done by the World Bank or the NSO), social security or labor tax administrative data, often reported in published national statistics (useful when most employment is formal), or labor force surveys.

¹⁵ Processing and storage facilities may provide post-harvest, off-season jobs for farmers, however, reducing their underemployment and adding to total income. This issue can be investigated during preparation.

creation triggers for payment, as these triggers were set pretty low. However, despite this, 75 percent of the winning firms he surveyed reported more employees to the program than they did in his survey. This suggests that using an independent contractor to collect data on jobs created - as part of a detailed survey of beneficiary firms - might be warranted.

The Cote d'Ivoire Cashew Competitiveness Project (P158810) was approved in March 2018, and was cited in the IDA19 JET framework paper as a positive example of a whole-of WBG approach to realizing jobs objectives. The JET framework paper notes that 12,000 direct jobs are expected to be created in a new domestic processing sector to be developed under the project.

The project finances (through a dedicated loan financing facility) four new cashew processing platforms (sectoral industrial parks). The cashew processing platforms include: (i) warehouses for storage of raw cashew nuts; (ii) cashew processing plants (to remove shells and package the roasted nuts for export, and to roast cashew nuts for local consumption); and (iii) plants to extract cashew nutshell liquid and process cashew nutshell cake (byproducts used for animal feed and other purposes). As these platforms would contain entirely new processing facilities, it can be assumed that the bulk of the new jobs created would be found in these new, modern facilities at the processing platforms.

Project documentation notes that at the start of the project, existing processors had high processing costs and low labor productivity, with less than 50 percent of installed cashew processing capacity being used (PAD, page 3). These processors, as well as existing wholesale traders (engaged in farm-level purchasing, sorting, storage, and transport to processors) will be able to benefit from a dedicated financing facility (loans or grants depending on firm size) to help them upgrade their facilities in order to compete with the new processing platforms.

The off-farm jobs outcome (for jobs in the processing facilities) is included in the results framework as an intermediate indicator:

- *Number of jobs created within the cashew processing platform, with a baseline of zero and an endline target of 12,000, of which 50 percent should go to women.*

It is difficult to judge the feasibility of the 12,000 new jobs estimate. The PAD contains a detailed financial analysis for both the storage/warehouse level and the processing level of the value chain which *does not explicitly state expected employment numbers or wage costs*. However, the PAD quotes a UNIDO estimate that cashew processing in Cote D'Ivoire could eventually employ over 400,000 people. As a net new jobs estimate, 12,000 over the project period could therefore be high or low.

No data are provided on the number of jobs in existing processors (for comparison). Certainly if the current plants have excess capacity, they could process more cashew without hiring many more workers. However, they might also be forced to close if they cannot compete with newer plants supported by the project (even after investments in upgraded facilities which could be supported by the project).

There is no discussion of the expected *quality of the potential new jobs* (e.g., seasonal or full-time; wage and skill levels, social protection benefits, etc.).

Overall, the project (as detailed in the PAD) is a good example of how successful bank-supported agricultural value chain projects can support ambitious JET agendas in client countries. While it is commendable that this project plan included a jobs outcome indicator (and that the jobs and livelihood aspects were highlighted throughout the PAD), a clearer focus on *job quality*

throughout the value chain, including in existing processors in the project areas, could lead to a more complete monitoring and evaluation plan with respect to jobs outcomes.

For example:

- a baseline warehouse and industry jobs estimate would have been helpful;
- as a monitoring indicator, a sector or subsector-wide net jobs measure would have provided more information on the intervention's actual jobs results;
- the target of 50% female employment on the platform is commendable, but it could be helpful to know whether the female jobs would have the same average pay as the male jobs;
- it could be helpful if job quality in enterprises supported by the project could be monitored as well as number of jobs; and
- it would be helpful if farm-level earnings from cashew orchards were estimated at baseline, monitored during the project, and evaluated at completion.

6. Conclusion

Bank-supported agricultural projects crop agriculture projects have implicitly supported a JET framework approach to sector growth and development. The reasons are obvious - agricultural value chains provide employment opportunities to the majority of the labor force in low and lower-middle income countries. Yet Bank-supported agricultural projects have not always recognized, identified, and tracked these outcomes, despite their importance to project beneficiaries and governments. This note discusses why focusing explicitly on employment outcomes is important to Bank and country goals and strategies as well as the success of crop agriculture projects, and provides suggestions on how this focus can be made operational.

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Table 1: Identifying and Monitoring Jobs Outcomes of Crop Agriculture Projects

Type of project/intervention	PDO examples	Possible Jobs outcomes	Job-related PDO Indicators (examples)	Challenges	Resources
1. Projects designed to improve on-farm land and/or labor productivity , usually through a combination of research, direct provision/financing of inputs, and extension/capacity building, as well as improvements in rural infrastructure (transportation, irrigation, storage, and logistics, etc.).	<p><u>Current:</u> -to increase agricultural productivity of smallholder farmers in targeted areas</p> <p><u>Recommended:</u> -to increase on farm labor and land productivity of smallholder farmers in targeted areas.</p>	<p><u>Improved job quality:</u> -increased earnings per unit of land -reduction in seasonal underemployment -increased earnings stability</p>	<p>-revenue per hectare</p> <p>-time spent on the farm over the year or number of crop seasons per year (FTE)</p>	<ul style="list-style-type: none"> Seasonality in employment activities Estimating crop income 	<p>Survey measurement guidance and model instruments: (1) https://www.worldbank.org/en/programs/lsms/initiatives/lsms-isa (2) https://www.50x2030.org/resources/survey-instruments</p>
2. Improve access to farming opportunities (e.g., for refugees, youth, vulnerable groups) through access to land (or more secure land tenure), knowledge, inputs	<p><u>Current:</u> -to improve access of poor and vulnerable households in selected communities to financial services, opportunities for generating income</p> <p><u>Recommended:</u> -to increase labor earnings of poor and vulnerable households</p>	<p><u>Labor force participation</u></p> <p><u>Improved job quality</u> (as above)</p>	<p>-share of adults in household employed</p> <p>-revenue per hectare</p> <p>-time spent on the farm over the year or number of crop seasons per year (FTE)</p>	As above	
3. Value Chain projects , which increase post-harvest value addition by enhancing the competitiveness post-harvest of value addition activities or strengthening the upstream supply chain	<p><u>Current</u> -to increase the number of farmers benefitting from commercial agricultural value chains.</p> <p><u>Recommended:</u> -to increase the number and earnings of farmers selling the production through commercial agricultural value chains</p> <p>Or</p> <p><u>Current:</u> -to increase productivity, quality and value-added, benefiting smallholder farmers and the processing industry.</p> <p><u>Recommended:</u> --to increase productivity, quality and value-added (in x crops), raising the earnings of smallholder farmers and increasing output and employment in the processing industry.</p>	<p><u>New employment created</u></p> <p><u>Improved Job quality</u> -earnings</p> <p>-safety</p> <p>-job satisfaction</p>	<p>-total jobs in processing of x commodity, with and without contracts -total (FTE) hours worked in processing plants</p> <p>-earnings per hour in processing plant - revenue per hectare</p> <p>-labor-related injuries in processing plant</p> <p>-workers able to work as many hours as they want</p>	<ul style="list-style-type: none"> Universe of firms engaged in post-harvest value addition activities may not be known Recent data on employment in sector or sub-sector may not be available (Labor Force survey data may not be collected regularly) 	<p>Jobs in Value Chain survey toolkit: https://documents1.worldbank.org/curated/en/535171533831283854/pdf/129350-WP-Jobs-in-value-chains-survey-toolkit-PUBLIC.pdf</p>