

INNOVENT-CEC GARNETON NORTH SOLAR LIMITED

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**FINAL LIVELIHOOD RESTORATION PLAN (LRP) FOR THE PROPOSED 20MWac SOLAR PARK AT THE GARNETON NORTH SITE-KITWE ZAMBIA**

**February 2025**

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DEFINITION OF KEY TERMS

This Livelihood Restoration Plan (LRP) uses several terms as sourced from the IFC’s “Handbook for Preparing a Resettlement Action Plan”, 2008, with or without modifications as applicable to this Project. The following are some of the key terms used in this LRP.

**Compensation: -**Payment in cash or in kind at replacement value for an asset or a resource that is acquired or affected by the project at the time the assets need to be replaced.

**Economic Displacement: -**Loss of income streams or means of livelihood resulting from land acquisition or obstructed access to resources (land, water or forest) caused by the construction or operation of the project or its associated facilities. Not all economically displaced people need to relocate due to the project.

**Physical Displacement: -**Loss of shelter and assets resulting from the acquisition of land associated with the project that requires the affected person(s) to move to another location.

**Project-Affected Area: -**An area which is subject to a change in use as a result of the construction or operation of the project.

**Project Affected Household (PAH): -**A PAH is a household that includes one or several Project Affected Persons as defined above. A PAH will usually include a head of household, his/her spouse and their children, but may also include other dependents living in the same dwelling or set of dwellings, like close relatives (e.g., parents, grandchildren etc.).

**Project Affected Person (PAP): -**Any person who, as a result of the implementation of the project, loses the right to own, use, or otherwise benefit from a built structure, land (residential, agricultural, pasture or undeveloped/unused land), annual or perennial crops and trees, or any other fixed or moveable asset, either in full or in part, permanently or temporarily.

**Replacement Value: -**The rate of compensation for lost assets must be calculated at full replacement value, that of the assets plus transaction costs (taxes, registration fees, cost of transport associated with registration of new land and land transfer, etc.). The replacement value must reflect the cost at the time the item must be replaced.

**Relocation/Resettlement Assistance: -**Support provided to people who are physically displaced by the project. Assistance may include transportation, and social or other services that are provided to affected people during their relocation. Assistance may also include cash allowances that compensate affected people for the inconvenience associated with resettlement and defray the expenses of a transition to a new locale, such as moving expenses and lost work days.

**Vulnerable Groups: -**People who by virtue of gender, ethnicity, age, physical or mental disability, economic disadvantage, or social status may be more adversely affected by resettlement than others and who may be limited in their ability to claim or take advantage of resettlement assistance and related development benefits.

**Stakeholders: -**A broad term that covers all parties affected by or interested in a project or a specific issue—in other words, all parties who have a stake in the project. Primary stakeholders are those most directly affected—in resettlement situations, the population that loses property or income because of the project. Other people who have interest in the project such as local authorities, beneficiaries of the project (e.g., the general public), etc. are termed secondary stakeholders.

**Cut-off date: -**The date of completion of the census and assets inventory of persons affected by the Project. Persons occupying the project footprint after the cut-off date are not eligible for compensation and /or resettlement assistance. Similarly, fixed assets (such as built structures, crops and fruit trees) established after the date of completion of the assets inventory, or an alternative mutually agreed date, will not be compensated. It is simply the date after which eligibility for compensation or resettlement assistance (as the case may be) will not be considered.

**Eligibility: -**Entitlement to resettlement benefits (compensation or other resettlement assistance) due to economic or physical displacement.

**Entitlements: -**Include the range of measures comprising cash or kind compensation, relocation cost, income restoration assistance, transfer assistance, income substitution and business restoration, which are due to affected households, depending on the type and degree/nature of their losses, to restore their social and economic base.

EXECUTIVE SUMMARY

**Compensation Summary Sheet**

|  |  |  |
| --- | --- | --- |
| **#** | **Variables** | **Data** |
| A | General |  |
| 1 | Region/Province/Department | Copperbelt |
| 2 | Municipality/District… | Kitwe |
| 3 | Village/Suburb … | Garneton |
| 4 | Activity(ies) that trigger resettlement | Land clearing and levelling to pave way for installation of sun-tracking solar PV panels and support infrastructure |
| 5 | Project overall cost (USD) | US$24,207,000 |
| 6 | Overall resettlement cost (ZMW) | ZMW 149,703.00 |
| 7 | Applied cut-off date (s) | 6th February 2019 |
| 8 | Dates of consultation with the people affected by the project (PAP) | 23 November 2018, 18 December 2018, 6  February 2019, 30 April 2019, 4 June 2019, 17 July  2019 , 6 August 2019 and 19 September 2019. |
| 9 | Dates of the negotiations of the compensation rates / prices | PAPs compensated in February 2020. |
| B | Specific information |  |
| 10 | Number of people affected by the project (PAP) | 26 |
| 11 | Number of Physically displaced | 0 |
| 12 | Number of economically displaced | 26 |
| 13 | Number of affected households | 26 |
| 14 | Number of females affected | 18 |
| 15 | Number of vulnerable affected | 11 |
| 16 | Number of major PAP | 1 lost a shallow well which was drilled at the filled |
| 17 | Number of minor PAP | 24 |
| 18 | Number of total right-owners and beneficiaries | 0 |
| 19 | Number of households losing their shelters | 0 |
| 20 | Total area of lost arable/productive lands (ha) | 4.2 ha |
| 21 | Number of households losing their crops and/or revenues | 25 |
| 22 | Total areas of farmlands lost (ha) | 0 |
| 23 | Estimation of agricultural revenue lost (ZMW) | ZMW 26 292.00 (see table 17) |
| 24 | Number of buildings to demolish totally | 0 |
| 25 | Number of buildings to demolish totally at 50% | 0 |
| 26 | Number of buildings to demolish totally at 25% | 0 |
| 27 | Number of tree-crops lost | 30 |
| 28 | Number of commercial kiosks to demolish | 0 |
| 29 | Number of ambulant/street sailors affected | 0 |
| 30 | Number of community-level service infrastructures disrupted or dismantled | 2 access routes |
| 31 | Number of households whose livelihood restoration is at risk… | 26 |

**Brief description of project**

InnoVent-CEC Garneton North Solar Limited (GaN) intends to install a 20MWac Solar PV plant on a 56-Ha piece of land located in Garneton area of Kitwe, hereby called Garneton North. The Project site is located about 23 km northwest of Kitwe CBD. The project entails clearing of vegetation from the project site to pave way for installation of the primary components of the project including PV modules with tracking mounting structures, underground DC and AC cables, transmission lines, inverter stations, transformer stations, storage and office buildings, access roads, internal access tracks, a perimeter security fence, and security rooms. Electricity generated from the Garneton North Solar PV Park will be evacuated via a 33-kV combined evacuation route of a transmission line from a Collector Station at the solar PV site to the existing ZESCO’s Mwambashi Substation located along Kalulushi road.

**Objectives of the LRP**

The objectives of the LRP include:

* Identify and mitigate potential negative impacts on the livelihoods of local communities, particularly those who maybe directly suffer losses in terms of agricultural fields, tree crops, access routes, etc..
* Ensure that affected persons are able to restore their livelihoods to pre-project levels or better through sustainable income-generating activities, skill development, and employment opportunities related to the solar PV project.
* Provide fair and transparent compensation for loss of assets or access to resources, ensuring vulnerable groups receive adequate support.
* Facilitate continuous consultation and participation with affected communities and stakeholders throughout the project lifecycle to ensure their concerns and inputs are addressed.
* Implement a monitoring and evaluation system to track the effectiveness of livelihood restoration measures and make necessary adjustments.

Demography

* The census of PAPs conducted on the project land identified a total of 26 people that were directly affected by the project through loss of agriculture fields.
* The gender distribution of affected PAPs shows a notable imbalance, with 18 females and 8 males.
* Majority of the PAPs (23) were younger than 65 years, while only 3 were 65 years and above. The surveys did not encounter any PAP aged below 18 years, i.e. the age limit for one to be identified as an adult or minor in Zambia.
* From a sample of 15 interviewed PAPs, 2 indicated that they had attained tertiary level of education, 7 of the PAPs had attained secondary level education, while 5 had only attained primary level education and 1 did not attain any level of education.
* Out of the 21 interviewed PAPs, 18 were in good health, 1 was disabled while 2 reported to have been having prolonged health challenges.

Livelihood sources

* Only 3 out of the 26 PAPs indicated to have formal employment as a source of livelihood, the lest of them had their livelihoods from Agricultural activities from project land, agricultural activities outside the project land, petty trading/small businesses, family remittances and house rentals.
* Given the national minimum wage of ZMW980 per month (ZMW11,760/annum reported for the year 2019), it could be said that only 38.5% of the PAPs earned up to or higher than the national minimum wage, suggesting that the majority were relatively poor.
* The surveys indicated that 67% of the PAPs were saving something from their total income. The savings ranged between ZMW440 and ZMW15,455 per annum.

Asset ownership

57.14% of the PAPs did not have their own houses and hence lived in rented homes where they paid rent averaging ZMW80 per month. The survey also showed that only 23.8% of the PAPs owned residential or commercial plots outside the project area.

Duration of cultivation on project land

The surveys indicated that out of the 26 PAPs, 9 PAPs had been practicing seasonal agriculture on the project land for Less than 5 years. Similarly, 9 PAPs spent above 10 years practicing seasonal agriculture on the project land and 8 had spent between 5 – 10 years on the project land.

**Social and economic impacts of the project on the affected people (see also ESIA findings)**

The project is expected to have positive and negative mpactshe positive impacts include:

* Increased electricity availability, i.e. 20 MWac, is to be added to the national grid. This will increase the national power generation capacity and reduce power outages.
* Increased power reliability is expected to increase investments and improve the service delivery national wide and result in more economic growth.
* Increased job opportunities for skilled and unskilled labour direct and indirect both during construction and post construction.

The negative impacts include:

* **Number of Project Affected Persons** (PAPs): In total, the project affects 26 PAP who had encroached on project land for seasonal agricultural practices.
* **Loss of Land and change of Land use:** The project will require the whole 56 Ha comprising the project land. The project land is part of the wayleave and already on title owned by the Copperbelt Energy Corporation Plc who is a partner in the Project. None of the 26 PAPs enumerated on site have title deeds or legal ownership of the project land and have since just been encroaching. However, the Developer is committed to ensuring that all PAPs are compensated for their assumed loss of crops/fruit trees to satisfy local and internation safeguards regarding economic displacements.
* **Loss of Crops and Trees:** As mentioned in the above bulletin, a number of fruit trees and crop fields will be affected by construction of the project. The crops will be compensated for at the prevailing market costs, while fruit trees shall be compensated at the full replacement cost.
* **Impacts on Structures:** There are no physical structures on the project land that may be displaced due to the project.
* **Loss of Livelihood:** Loss of fruit trees and seasonal agricultural fields which have been generating seasonal income for the PAPs represents a notable loss of livelihoods.
* **Impacts on vulnerable groups:** The vulnerability assessment identified Eleven (11) PAPs as vulnerable. This was based on 6 vulnerability criteria including old age, income levels, not having alternative land or source of livelihood, a PAP having health challenges, a PAP being female and widowed (female household head) and physical or mental disability. Therefore, specific mitigation measures have been designed to assist them to ensure the project does not render these PAPs worse than before the project.

Legal and institutional framework for resettlement

The legal framework in Zambia defines the rights for individuals to own property but also provides for the state right to acquire property as well as to balance individual rights with public interests. The main laws applicable here are:

* **The Constitution of the Republic of Zambia**: **Article 11:** guarantees that every person in Zambia is entitled to protection for the privacy of his home and other property and from deprivation of property without compensation. **Article 16:** provides that property of any description shall not be compulsorily taken possession of, unless by or under the authority of an Act of Parliament which provides for payment of adequate compensation for the property, while **Article 23:** guarantees protection from discrimination on the ground of race, tribe, sex, place of origin, marital status, political opinions, colour or creed.
* **Lands Acquisition Act Chapter 189**: Section 3 of the Lands Acquisition Act empowers the President of the Republic to compulsorily acquire property. Sections 5 to 7 of the Act provides for the issuing of notices to show the intention to acquire, notice to yield up property and to take up possession. Section 10 of the Act provides for compensation as consisting of such moneys as may be agreed upon.

According to the livelihood survey conducted, most PAPs preference on the mode of compensation payments was monetary compensation as compared to in kind. Hence, the valuation conducted and considered payment of monetary to the PAPs as per their preferred mode of payment. The vulnerable groups were given the in-kind compensation in addition to the monetary choice.

The African Development Bank’s (AfDB) Integrated Safeguards System (ISS) 2023 outlines the principles and requirements for managing compensation/resettlement process for AfDB-funded projects. The following Operational Safeguards requirements were found to be relevant to the resettlement process of the proposed project:

* Operational Safeguard OS1: Assessment and Management of Environmental and Social Risk and Impact
* Operational Safeguards OS5: Land Acquisition, Restrictions on Access to Land and Land Use, and Involuntary Resettlement
* Operational Safeguard OS7: Vulnerable Groups
* Operational Safeguard OS10: Stakeholder Engagement and Information Disclosure

The key requirements under AfDB operational safeguards are:

* Requires consideration of feasible alternatives during project design, including re-sitting and re-routing to avoid or minimize the impacts of displacement **–** An overhead transmission line was the most probable option for the project and will be adopted henceforth.
* Requires meaningful consultation of all stakeholders and disclosure of project information in a way that people communities where the project traverses and the general public gets full understanding and ownership of the project - Consultation was part of preparation of this LRP.
* Compensation is decided through consultation with those to be impacted and affected people are fully compensated for their loss before the land is taken from them. In addition, the total project costs include costs of resettlement/displacement activities and factors in the loss of livelihoods. All PAPs have since been fully compensated and displaced effective February 2020.
* Requires special attention to vulnerable groups in particular old age, income levels, not having alternative land or source of livelihood, a PAP having health challenges, a PAP being female and widowed (female household head) and physical or mental disability. This LRP identified 11 vulnerable PAPs.
* Requires implementation of monitoring and evaluation of livelihood restoration programs. This LRP provide the monitoring and evaluation plan in section 16.

Institutional arrangements

The institutional frameworks are necessary for effective LRP implementation. The LRP has presented the arrangements to guide the implementation of the displacements and livelihoods restoration activities. It has also proposed coordination mechanisms to ensure there is a clear flow of information and feedback among the implementers and other key stakeholders.

In this project, InnoVent-CEC Garneton North Solar Limited takes full responsibility to facilitate preparation of the LRP together with the disclosure and implementation of the LRP. InnoVent- CEC Garneton North Solar Limited will also prepare and pay compensation to all PAPs and implement all the livelihood restoration measures as agreed in the LRP.

A Resettlement Working Group or committee was established. The committee (group) had members representing the Developer, Project Affected Persons and some community members who were not affected by the Project. Relevant government departments and local authorities were co-opted whenever necessary. The committee played an important role as a liaison between the Project Affected Persons and the Developer as well as other secondary stakeholders. Notable secondary stakeholders involved in the LRP implementation included:

* Kitwe City Council
* Government Valuation Department
* Ministry of Agriculture
* Zambia Environmental Management Agency (ZEMA)
* Area Councillor for Itimpi ward
* Non-Governmental Organizations (Proclamation Institute of Zambia – PIZ)
* Banks

Consultations and negotiations held / conducted

Consultation with PAPs is one of the key requirements of the AfDB ISS 2023. Hence, it formed the starting point for all activities relating to displacements. Public consultation had been an ongoing activity for the Garneton North Solar PV Project. The basis for consultations were:

* The ESIA process in Zambia makes public consultation with the communities, indispensable.
* The project involves economic displacement (agricultural fields) through displacement of agricultural fields and fruit trees, hence meaningful consultation with PAPs was critical in order to reach agreements with the affected persons to be displaced.
* Local communities had knowledge of local conditions - an invaluable asset to the Developer in terms of finding the suitable information that may assist to plan and implement the project smoothly.

Consultations were done mainly through community meetings with the PAPs and community members living within and near the project area, and some information was disclosed before and during socio-economic surveys.

The first step involved thorough walks throughout the Project site to establish the presence of features which may be liable to displacement prior to project development. This was followed by the identification of the owners in the case of agricultural fields and the users in the case of access routes. A census of the Project Affected Persons was also undertaken during the stage of identification of the owners of agricultural fields. After identifications of owners of agricultural fields, a team of surveyors moved onto the site to map the exact sizes of crop fields falling under the project site. Survey (mapping) of fields was repeated by the Ministry of Agriculture during crop valuation surveys. The ward leadership and local authorities were informed about the next course of action concerning agricultural fields located on the project land.

Community Meetings

During the survey exercise, Local representatives, such as the area councillor, ward development chairerson and Kitwe City Council were consulted first as a way of introducing the project and the other players in the LRP exercise. Then before engaging the communities, the area councillor was informed and requested to attend sensitization meetings whenever possible.

The meetings were held at Kitwe City Council and within Garnerton area where the site for the proposed Garneton North Solar PV project is located. The main purpose of the meetings was;

* To give insights on how displacements or resettlement issues are handled in such projects.
* To get a fair understanding of the social economic baseline indicators of the project area.
* To establish how grievances have been handled in similar past project implementation and ascertain if there is sufficient capacity to handle Social safeguards at the District level.

Emphasis was placed on a fully inclusive, open and transparent stakeholder participation process in the transfer of information on the project. Stakeholders meetings were held from 18th December 2018 to 19th September 2019 in with Kitwe City Council and in Garneton with the PAPs and other people in communities near the project site.

During the public consultations, the location and aerial extent of the project site was clearly explained to the stakeholders. Stakeholders were also informed of the expected benefits, impacts

in terms of economic displacement (loss of seasonal crop fields) and the mitigation measures of how they will be compensated for the losses. Stakeholders, especially the PAPs were also informed of the arrangements to address any grievances that might arise and their opportunity to influence and identify appropriate benefits.

Compensation Plan Eligible Persons

All persons who were established to have seasonal agricultural fields and fruit trees on the land comprising the Garneton North Solar PV project site were eligible for compensation. In addition, all footpaths which were traversing the site at the time of field surveys and are used by the communities to access farms across the project site were also eligible for compensation or rerouting.

GaN was cognizant of the fact that the Garneton North Solar Project might impact on the food security and income earning capacity of the PAPs, and hence paid full attention to all issues surrounding the displacements. The table below presents the entitlement framework for the PAPs on the Garneton North Project.

**Entitlement Matrix Table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of**  **loss/benefit** | **Applies to** | **Definition of application** | **Description of Entitlement** |
| Loss of Land and agriculture fields | Parts of the project land that was encroached and used for illegal cultivation. | Applies to the 26 PAPs that were found to be cultivating on the Garneton North Project land | * Compensation in cash for assumed loss of crops for all PAPs. * Cash for renting of cultivation land for three seasons for deserving PAPs as per vulnerability criteria, * Relocation allowance for all displaced PAPs * Alternative cultivation land for the vulnerable PAPs |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | * Agriculture input support and training for all PAPs |
| Loss of Fruit Trees | Parts of the project land that was cultivated by PAPs and had fruit trees | Applies to the 7 PAPs that were cultivating on the project land and mango or guava trees were found on their fields | * Cash compensation based on ten-year period |
| Loss of foot paths | Parts of the project land that was used for short cut routes to surround farms by people from the surrounding compounds | The surrounding Project Community | * Agreement of suitable common foot paths with the community |

Livelihood restoration and Community Development

Apart from compensation, various livelihood restoration measures were offered to the PAPs. The various livelihood restoration programs implemented for this LRP included the following:

* Assistance in cash for rent of alternative land for PAPs other than the vulnerable.
* Alternative land within the site’s vicinity allocated to the vulnerable PAPs for continuation of season farming.
* Agriculture input for a specified period of time
* Training in improved agriculture methods and agriculture as a business.
* Further training in entrepreneurship, marketing and financial management.
* Lump sum payment of resettlement / relocation allowance.
* Provision of employment to project affected people with ability to fit the required positions during construction phase.

Arbitration / Grievance Redress Mechanism

A grievance mechanism has been developed for potential use by stakeholders. The aim of the grievance mechanism is to achieve mutually agreed resolution of grievances raised by all stakeholders. The objectives of the grievance mechanism are:

* To provide Project Affected People (PAP) with a straightforward, accessible and prompt avenue for making a complaint or resolving any dispute that may arise during the course of the project.
* To ensure that appropriate and mutually acceptable corrective actions are identified and implemented to address the complaints
* To verify that complaints are satisfied with outcomes of corrective actions
* To avoid or minimize on the need to resort to judicial proceedings which can be long and expensive

The process of grievance redress will be as follows:

* Identification of grievance: identify or receive grievances during meetings or via phone calls and record on grievance form.
* Logging of Grievance: All grievances will be recorded on a grievance form and await determination of severity of grievance by the committee responsible for handling grievances.
* Investigation of Grievance and recommendation of corrective action: undertake consultation with the complainant, conduct site visits or inspections to verify the grievance and gathering all necessary physical evidence including pictures.
* Discussion of Corrective Action with complainant and agreement of implementation period: Discuss all recommended options for corrective actions as well as the complainant’s preference. Also, clearly highlight all company policies and all relevant laws and regulations considered when considering the complaint.
* Documentation of agreed position: all agreed positions after thorough consideration and discussion of corrective action will be fully documented.
* Implementation of agreed position: The grievance receiving committee will ensure that the agreed position is implemented within a stipulated timeframe.
* Close grievance: grievance will be signed off by complainant after completion of implementation of the agreed position or action.
* Seek indulgence of Courts of Law: if the complainant is not satisfied with the outcome of the above steps, he/she can take the incidence to the courts of law.

Monitoring and evaluation

The AfDB ISS 5 provides that the project Developer shall be responsible for Monitoring and Evaluation (M&E) activities provided for by this LRP and where necessary engage a third party to undertake monitoring/evaluation. Monitoring will provide an advance warning system for Innovent-CEC and an avenue through which the PAPs will make their needs and reactions known. The funding for the M&E activities shall form part of the LRP and project cost.

Two bases of monitoring and evaluation will be applied in measuring the Project’s achievements. This includes performance monitoring that is process basis (progress) and impact monitoring that is output basis (overall achievement).

Performance Monitoring shall include the monitoring of the progress of LRP implementation against entitlement matrix, budget and schedule. This activity will be undertaken largely directly by the Developer and it can be defined as Internal Monitoring.

Impact Monitoring shall include the periodic assessment of social changes that occur in the project affected areas as results of the mitigation actions imposed by the project. A consultant will undertake this monitoring and it can be defined as External Monitoring. Such monitoring will be addressed with two strategies. For the directly affected people through the monitoring of Livelihood Restoration Plan, undertaking periodic household surveys with the scope to measure the changing in living condition of the PAPs during and after the livelihood restoration programs. The assessment shall be both qualitative and quantitative.

However, aspects of performance monitoring may also be undertaken on an annual basis by the external consultant as part of the annual LRP audit report (which is also part of the annual E&S Audit).

There will also be a Completion Audit with the key objective to determine whether Innovent-CEC efforts to restore the living standards of the PAPs have been properly conceived and executed. This will be undertaken after all LRP inputs have been completed.

Total cost for the full implementation of the LRP

The total amount paid for compensation for displaced crop fields, fruit trees, resettlement (disturbance) allowances is tentatively **ZMW 149,703.00**. Additional costs were incurred for purchasing alternative land for the most vulnerable PAPs, paying of trainers for capacity building workshops, purchase of agricultural inputs for all PAPs for 3 seasons, establishment of alternative routes for displaced footpaths and monitoring and evaluation.

Implementation Schedule

Mapping of crop fields and inventory of other features of socio-economic importance on the project land began in April 2019. This was coupled with a rigorous stakeholder engagement and identification of PAPs. Disbursement of all compensation was concluded in February. The PAPs expressed anxiety to receive their compensation packages in good time so that they could rent and prepare their new fields before the onset of the rainy season. All issues to do with payment of compensations and sourcing of alternative land for the most vulnerable among the PAPs were concluded in February 2020. All payment were made to the respective PAPs in cash (See Appendix 7\_4). Agreements forms which clearly outlined the amounts paid for the various crops, resettlement allowance as well as amount to rent alternative land for 3 seasons were signed between the PAPs and the Developer (GaN).

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**Caroline Sinkamba**

Senior Manager- HSE and Risks Copperbelt Energy Corporation Plc

# Introduction

## Background and Project Location

InnoVent-CEC Garneton North Solar Limited (GaN) intends to install a 20MWac Solar PV plant on a 56-Ha piece of land located in Garneton area of Kitwe, hereby called Garneton North. The Project site is located about 23 km northwest of Kitwe CBD. Electricity generated from the Garneton North Solar PV Park will be evacuated via a 33-kV combined evacuation route of a transmission line 8.1 km long which will run from the Garneton North proposed Collector Station to the existing Mwambashi Substation located along Kalulushi road.

## Current State of the Project Site

Following the successful compensation and displacement of the locals who had previously encroached on the project land for seasonal subsistence agriculture, the Garneton North Project site is now free of encroachments. The Developer (GaN) has been conducting patrols to curtail any future encroachments while several caution messages have been pasted around the site for all to read and abide. (refer appendix 2 of LRP) used by owners of private properties located across northern boundary of the site; and footpaths used as shortcuts by surrounding communities.



Figure 1.2‑1: Caution for the general public to avoid trespassing on project land

## Identification of PAPs and Announcement of Cut-off Date

A census was conducted in November 2018 to establish the extent and number of affected agricultural fields and persons on the project land. The survey establishes a total of 26 agricultural fields belonging to different owners. This was followed by a public disclosure meeting which was held on 6th February 2019. The meeting started with disclosure of project information and finally the announcement of the Cut-off Date. The meaning of cut-off date was explained in the local language – as the last date for the Developer to take record / register all assets/properties/activities on the project land, all cultural or religious activities taking place on the project land or any traditional activities such as rituals, etc. The people were informed to see any of the team members or their community leaders and if necessary, in confidence after the meeting. None of the PAPs had anything thing new to declare and hence the cut-off date was set for 17:00 Hrs on the same 6th February 2019.

Preparations for implementation of the proposed Garneton North Solar PV Project has resulted in displacement of agricultural fields which to a lesser extent represent loss of livelihoods to some PAPs. To address the impact of loss of livelihoods due to displacements of agricultural fields, the Developer followed a due process and prepared this Livelihood Restoration Plan (LRP) to serve as a framework and audit tool for displacements. The LRP describes the displacement and compensation principles and procedures that were employed to manage the impacts on livelihoods.

## Objectives and underlying principles of the Livelihood Restoration Plan (LRP)

### Objectives of the LRP

The objectives of the Livelihood Restoration Plan include:

* + - * To summarise and analyse the baseline information on the area and the Project Affected Persons
      * To define the legal and institutional framework and responsibilities for displacements and compensation
      * To define basic criteria for eligibility for compensation and cut-off dates
      * To identify the possible location(s) for displacements.
      * Identify and mitigate potential negative impacts on the livelihoods of local communities, particularly those who maybe directly suffer losses in terms of agricultural fields, tree crops, access routes, etc.
      * Ensure that affected persons are able to restore their livelihoods to pre-project levels or better through sustainable income-generating activities, skill development, and employment opportunities related to the solar PV project.
      * Provide fair and transparent compensation for loss of agricultural fields or access to resources, ensuring vulnerable groups receive adequate support.
      * Facilitate continuous consultation and participation with affected communities and stakeholders throughout the project lifecycle to ensure their concerns and inputs are addressed.
      * Implement a monitoring and evaluation system to track the effectiveness of livelihood restoration measures and make necessary adjustments.

This LRP was developed in consultation with stakeholders at different levels and provenance (communities, local authorities, District Government, etc.), for the purpose of smooth development and implementation of the livelihood restoration process. As part of the Environmental Impact Assessment for the Garneton North solar PV project, this LRP will be submitted together with the Environmental Project Brief report.

The key components of this Livelihood Restoration Plan include:

* + - * A census of Project Affected Persons
      * Basic eligibility criteria (including the cut-off date for compensation, which was set on 6th February 2019)
      * Options for compensation and rehabilitation
      * Definition of responsibilities
      * Evidence of public consultation
      * Tentative time frame

## Underlying principles of the LRP

This Livelihood Restoration Plan (LRP) was developed and implemented in line with the IFC Performance Standard 5 which aligns with the operational safeguard 5 of the AfDB Integrated Safeguards System (ISS, 2023) based on the following principles.

* + - * *Principle 1: Displacements (or resettlement must be avoided or minimized*: Avoid or minimise the need for displacements, consider alternatives, but balanced with considerations of safety for people living in the vicinity of the project;
      * *Principle 2: Genuine Consultations must take place*: Given its focus on displacement, the primary concern is to take seriously the rights and interest of the PAPs. For this to take place, voices of the PAPs need to be made clear, through the formation of the local level consultative forum, displacing population as a group, as close as possible to original location.
      * *Principle 3: Establishment of pre-displacement Baseline data*: To support the successful livelihoods restoration for the PAPs, the following activities were undertaken prior to displacements:
        + An inventory of affected agricultural fields and any other assets to determine fair and reasonable level of compensation or mitigation;
        + A socio-economic survey detailing all relevant socio-economic characteristics of the PAPs.
        + The inventory of agricultural fields (or assets) was used to determine and negotiate entitlements, while the socio-economic baseline data is required to monitor livelihood restorations. The information obtained from the inventories and socio-economic surveys was entered into a database to facilitate livelihood restoration planning, implementation, and monitoring.
      * *Principle 4: Assistance in relocation must be made available:* Ensure that the affected population can achieve an equivalent or improved standard of living within a reasonable time; and they should be provided with an acceptable level of services regardless of their previous conditions.
      * *Principle 5: Fair and equitable form of compensation:* Fully compensated for all transitional losses: transport costs and loss of income resulting from displacements.
      * *Principle 6: displacement must take place as a development that ensures that PAPs benefit:* The project should provide opportunities for development, affected population as far as possible to be the first to benefit from project opportunities, such as employment, training, etc.
      * *Principle 7: Vulnerable Groups must be specifically catered for:* The specific needs and rights of vulnerable groups will be recognized, protected, and compensated, through specific support to the elderly, female headed households and handicapped and through suitable land-for-land options. Informed consent to displacement proposals will be obtained through a participative consultation process.
      * *Principle 8: Displacements or relocations must be seen as an upfront project cost*: To ensure that compensation costs, as well as other relocation costs that fall within their scope of commitment, are built into the overall project budget as upfront costs.
      * *Principle 9: An independent monitoring and grievance procedure must be put in place*: In addition to internal monitoring that will be provided by the project team, institutional arrangements will be in place for different independent teams at community and district level to undertake independent monitoring of the displacement and relocation aspects of the project. A Grievance Mechanism (Appendix 4 of LRP) has been put in place to address any grievance of the displacement aspects of the project.

## Site and Compensation Alternatives

In arriving at the proposed project site, the Developer considered several other sites along the CSS129 wayleave area, which were not selected due to presence of physical encroachments and their proximity to ZESCO grid connection points. With respect to displacement of agricultural fields and loss of income, the Developer considered three compensation alternatives, including.

1. Complete cash compensation for loss of crops from agricultural fields falling on the project land for the majority of PAPs and additional cash to find rented land elsewhere for three seasons and alternative land for agricultural fields for the PAPs classified as very and extremely vulnerable.
2. Complete cash compensation for loss of crops from agricultural fields for all PAPs regardless of whether they are vulnerable or not and additional cash for finding rented land elsewhere for three seasons.
3. Compensation in kind for agricultural fields for all PAPs regardless of whether they are vulnerable or not.

The first alternative was found to be the most preferred option based on consultations with stakeholders and PAPs.

# Project Description

## Location of the Proposed Project

The Project site is located on a private land which is on title owned by the CEC. The Project site is found in Garneton area, about 23 km north-west of Kitwe town on the Copperbelt Province of Zambia. The Project site is approximately 56 ha in size, and considered big enough for 20 MWac solar PV project being proposed. Notable land marks in close proximity to the site include:

* + - Farm structures on Riverane Farm located some 600m east of the project site;
    - A farmhouse on a private small holder farm located some 270m southeast of the project site;
    - Farm buildings and other facilities at Proclamation Institute Zambia (PIZ), located some 200m from the site boundary;
    - Garneton Small-holder / low density residential area and Zambia high density residential area are found about 1.5 km southwest; and
    - A water treatment plant run by Nkana Water Supply Company Ltd, about 600m southwest of the Project site on the upstream of Mwambashi stream.

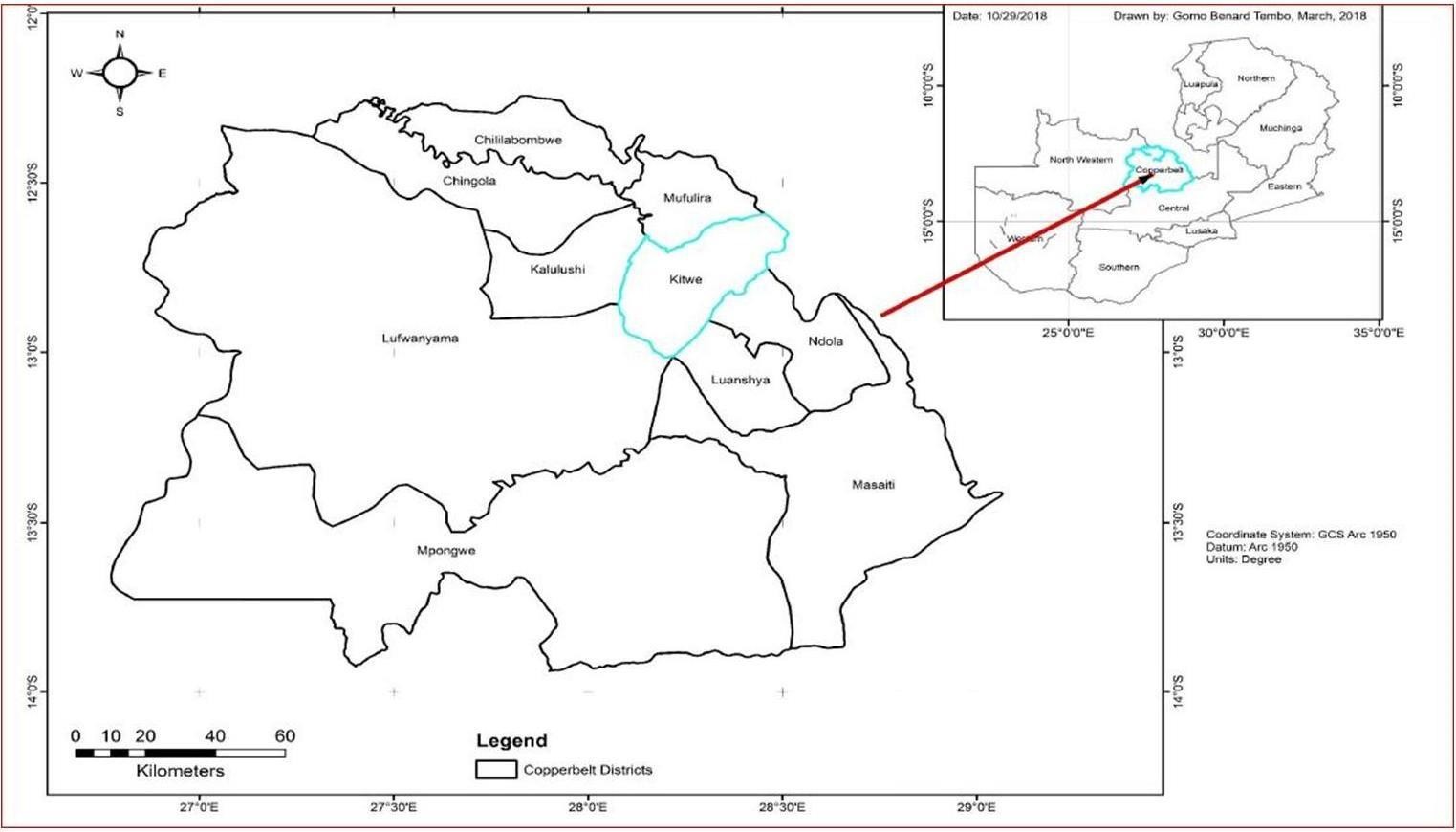
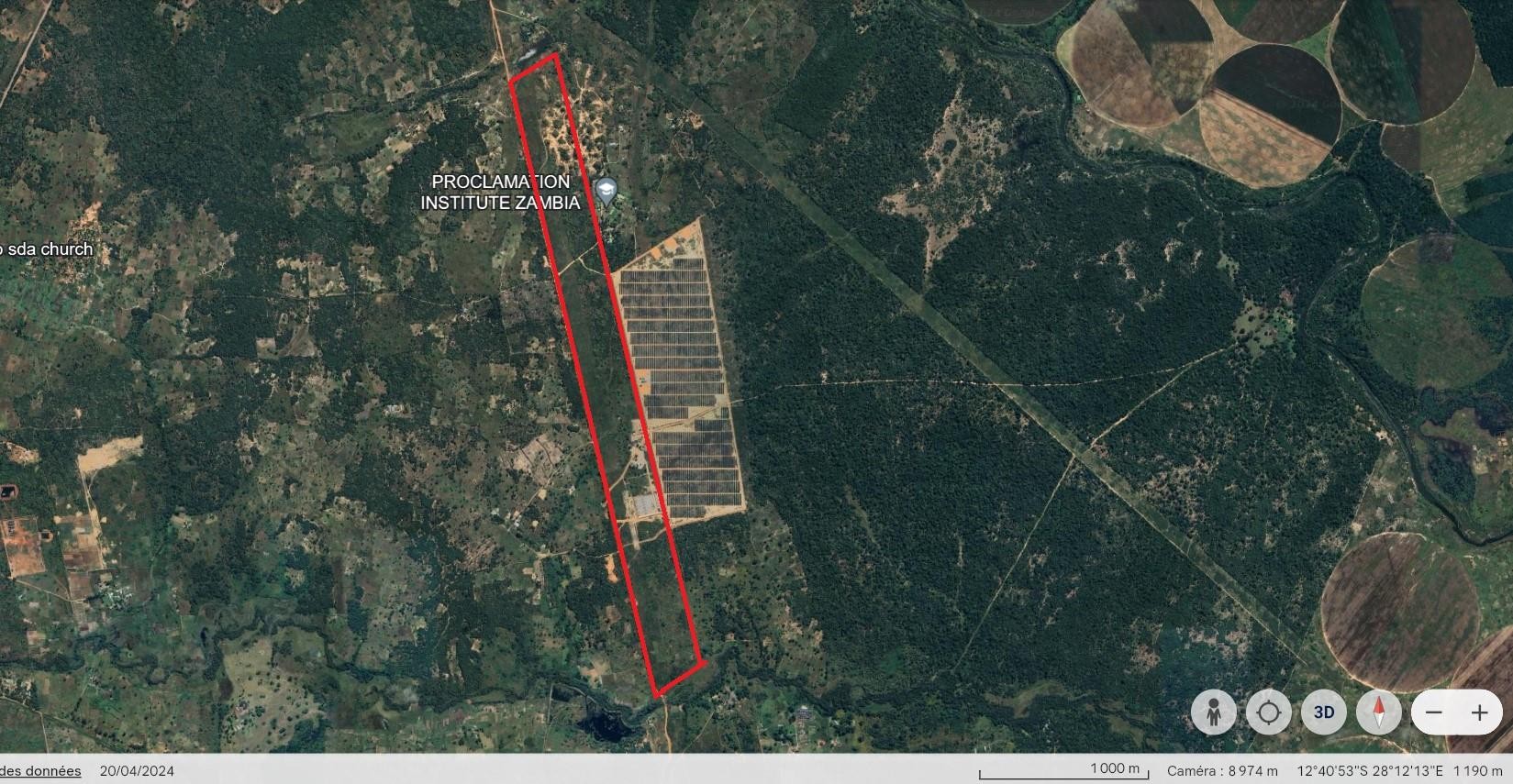


Figure 2.1‑1: Regional Locality Map

CEC Itimpi solar park



Private farm

Riverane farm

Mwambashi stream

Figure 2.1‑2: Google satellite image of the Solar PV Site and Immediate Surroundings

## Nature of the Project

The proposed project entails the construction and operation of a 20 MWac Solar Photovoltaic (PV) Power Plant along with various associated facilities to ensure efficient and reliable energy production. This ambitious venture includes several key components and infrastructure elements that are essential for the successful deployment and operation of the solar power plant. These components include:

* + - **PV Modules**: High-efficiency photovoltaic modules will be used to capture and convert solar energy into electricity. These modules are the primary components responsible for the generation of electric power.
    - **Tracking Mounting Structures**: To maximize energy capture, the PV modules will be mounted on tracking structures that follow the sun's movement throughout the day, optimizing the angle of incidence and thus enhancing power generation efficiency.
    - **Underground DC and AC Cables**: These cables will be used to transport the generated electricity from the PV modules to the inverter stations and subsequently to the transmission lines. The underground installation helps protect the cables from environmental factors and physical damage.
    - **Transmission Lines**: Dedicated transmission lines will be constructed to carry the generated electricity to the designated substations and the national grid (Separate environmental Assessment will be done for the transmission line).
    - **Inverter Stations**: These stations will house inverters that convert the direct current (DC) generated by the PV modules into alternating current (AC), which is suitable for transmission and distribution.
    - **Site Substations**: Substations will be established on-site to manage and regulate the electricity flow, ensuring it is at the correct voltage and frequency for safe transmission to the national grid.
    - **Stores and Office Buildings**: Facilities will be constructed to store equipment, spare parts, and other materials needed for the operation and maintenance of the solar power plant. Additionally, office buildings will provide workspace for the administrative and operational staff.
    - **Internal Access Tracks**: Well-constructed access tracks within the site will facilitate the movement of personnel and equipment, ensuring smooth operation and maintenance activities.
    - **Perimeter Security Fence and Security Rooms**: To ensure the safety and security of the plant, a perimeter fence will be erected around the facility. Security rooms will be established at strategic points to house personnel and equipment necessary for surveillance and protection of the site.

Electricity generated by the Garneton North Solar PV Park will be transmitted via a dedicated 8.1 km power line to the ZESCO Mwambashi substation. This substation is strategically located along Kalulushi road about a few hundred meters from the turn-off of the Kalulushi-Chingola roads, enabling effective integration of the generated power into the national grid. All matters relating to the transmission line have been adequately covered in a separate EPB and LRP prepared for the transmission line component.

By incorporating these comprehensive infrastructure elements, the project aims to ensure a robust and reliable solar power generation system. The construction and operational phases will be meticulously planned and executed to achieve high efficiency, sustainability, and alignment with the energy needs of the region.

## Main Activities

The project will be carried out in the following phases:

* Development/ planning phase;
* Construction phase;
* Commissioning phase;
* Operational phase; and
* Decommissioning phase.

These phases are described in more detail below.

## Planning Phase

During planning phase, the Developer will assess the key parameters required for the construction and operation of a solar PV power plant. This will include:

* ESIA which investigates the impacts on the surrounding biophysical environment and on the local communities including displacement of agricultural fields and fruit trees;
* Grid code requirements and connections;
* Zambian power requirements and political support;
* Solar resource simulations;
* Geotechnical ground investigations; and
* Topographical investigations

During the planning phase, the project will adapt and evolve to meet the requirements, time schedules and expectations of all the relevant parties.

## Construction Phase

The construction phase will begin with site preparation activities involving clearance of vegetation, treatment against re-growth, installation of fencing and levelling of the site and preliminary earthworks.

Thereafter, the site will be marked out, safety and security fencing installed and site access tracks upgraded. Clearance is not anticipated to be site-wide and will depend on the final configuration of the solar modules.

The main activities during construction phase will include the following:

* Excavation of cable trenches;
* Ramming or drilling of the mounting structure frames;
* Installation of the modules onto the frames;
* Installation of measuring equipment;
* Laying of cables between the module rows to the inverter stations;
* Construction of inverter station foundations and installation of inverter stations;
* Construction of site substation foundations and installation of site substation plant and equipment;
* Construction of control and security rooms and welfare facilities;
* Testing and commissioning;
* Removal of equipment and demobilization of construction team; and
* Construction of the transmission line.

Where possible; materials, plant and equipment, will be sourced from local suppliers. The bulk of the specialist PV equipment (modules, inverters, protection equipment etc.) will be imported from China, Europe or the USA. The construction phase will take approximately 10 months to complete.

## Commissioning Phase

The commissioning phase will be initiated once construction phase has reached a point where all DC, AC (low voltage) and AC (medium voltage) components are installed and in place. During this phase, components will be brought on line partially and systematically through a ramping up process. This will be done cautiously and over a reasonable period of time with a focus to observe component performance carefully and under minimal loads to ensure optimum equipment and operator safety. During this phase installers and operators will search for faults, hot points and other dangers with specialized equipment. Issues which are identified will then be immediately fixed or replaced. This

will take place over several days to ensure all parts of the 20 MWac installation is carefully checked and that when the park is ramped up to full capacity, the entire system is optimized and in safe operation.

In addition to the ramping up of the park, communication and safety equipment testing will take place according to both the project design as well as GETFiT and Zambian Grid Code requirements. These tests will be done in conjunction with ZESCO personnel and requirements.

The successful completion of this commissioning phase will result in Commercial Operation Date (COD). Thereafter the operation phase will commence.

## Operational Phase

The solar PV power plant will be operated on a 24 hour, 7 days a week basis. The operational phase of the project will comprise of the following:

* + - * Regular cleaning of the modules by trained local personnel using a combination of brushes, water and air;
      * Vegetation management for under and around the modules to allow maintenance and operation at full capacity;
      * Maintenance of all components including modules, mounting structures, trackers, inverters, transformers, substation plant and equipment;
      * Site management and maintenance of the welfare facilities;
      * Supervision of the electricity production; and
      * Site security monitoring.

## Analysis of site alternatives

The Developer focused on identifying sites that are suitable for solar PV development, but also meeting the criteria for providing electricity to the ZESCO grid and develop solar plant on already secured land.

In total, three alternative sites were considered at project planning phase, these include;

1. **Kitwe Substation-Garneton Wayleave:** This was not selected because there was no point where to connect to the ZESCO powerline or substation.
2. **CEC Wayleave-Turf Substation:** CEC owns a wayleave from Turf substation to Garneton. However, the land is heavily encroached with both physical structures and agricultural fields.
3. **Garneton North CEC Servitude (preferred site):** CEC owns land of about 56 ha, along the wayleave between Chimwemwe and Sabina Mufulira Road.

The Project Site was chosen by the developer due to, but not limited to, its proximity to an existing appropriate voltage substation with sufficient capacity and existing power transformers suitable for the export of the amount of electricity to be generated, i.e. 20 MWac of solar PV power. The Project site was also considered suitable as it is already owned by the developer, with no permanent encroachments or agricultural activities beyond seasonal practices and as such will not result in major losses or displacements to the community. In addition, the soil conditions (rocky and underlain by laterite) are positive for simple, cost-effective piled foundations to be utilized. Above all, the site is located in the way leave area of CEC’s (CSS129) 220 kV power transmission line and hence not expected to result in change of the physical aesthetics of the area. The site has been under continuous pressure from charcoal burning and shifting cultivation, which implies that no losses of significant natural habitats are expected as the result of project implementation.

# Institutional and Legal Framework

## IFC Performance Standards on Environmental and Social Sustainability

The Proponent is committed to meeting the IFC Performance Standards (PS) on Environmental and Social Sustainability. These standards, together with the accompanying Guidance Notes, have become the most widely accepted framework in the world for managing the social and environmental impacts and risks associated with private sector development projects in emerging markets. The PS most relevant to this LRP are described briefly below.

### Performance Standard 1: Assessment and Management of Environmental and Social risks and Impacts

PS1 describes how environmental and social issues are to be handled in project development and serves as the core around which the other standards are framed. This standard requires that nearby communities be appropriately engaged on issues that could potentially affect them.

Key requirements to this end include:

* Conducting an informed consultation and participation process with affected communities;
* Working in an inclusive and culturally appropriate manner;
* Addressing the needs of disadvantaged or vulnerable groups; and,
* Making available an effective grievance management system.

### Performance Standard 5: Land Acquisition and Involuntary Resettlement

PS5 refers to the management of physical and economic displacement resulting from project related land acquisition through livelihood restoration and resettlement processes. Objectives are to:

* Avoid or at least minimize involuntary displacement wherever feasible by exploring alternative project designs;
* Avoid forced evictions;
* Mitigate impacts from land acquisition, by providing compensation for loss of assets at full replacement cost and ensuring that livelihood restoration and resettlement activities are implemented with appropriate stakeholder engagement;
* Improve or at least restore the livelihoods and standards of living of displaced persons; and,
* Improve living conditions among those physically displaced through the provision of adequate housing with security of tenure at resettlement sites.

PS5 introduces the concept of negotiated settlements to avoid forcible removal of people or land use activities and requires that project proponents “bridge the gap” between IFC requirements and domestic legal requirements. PS5 also provides for proponents to prepare a Livelihood Restoration or Resettlement Framework “where the exact nature or magnitude of land acquisition or restriction on land use related to a project with potential to cause physical and/or economic displacement is unknown due to the stage of project development”. The Garneton North Solar Project did not result in displacement of any dwellings for the PAPs (Housing settlements). The displacements were purely economic (agricultural livelihoods).

## AfDB Integrated Safeguards System (ISS)

The compensation/resettlement process for the proposed 20 MW Garneton North Solar PV project will require compliance with the requirements of the African Development Bank (AfDB), as the international financier. The Integrated Safeguards System (ISS) of 2023 will be applicable to this project

The African Development Bank’s (AfDB) Integrated Safeguards System (ISS) 2023 outlines the principles and requirements for managing compensation/resettlement process for AfDB-funded projects. The broader Integrated Safeguards System comprises:

* The Vision for Sustainable Development, which sets out the Bank Group’s approach and aspirations regarding E&S sustainability;
* The Environmental and Social Policy, which sets out the Bank’s commitments and the relevant principles and requirements that the Bank must follow regarding projects, activities, and initiatives that it supports; Under The Bank’s due diligence and project classification process, this project has been classified as Category 2. Category 2 projects are Medium-risk operations. These are projects which are likely to induce detrimental, site-specific environmental and/or social impacts that can be minimized by including mitigation measures in an ESMP and in an Abbreviated Resettlement Action Plan (ARAP) or LRP, when applicable..
* The 10 Operational Safeguards such as OS1: Assessment and Management of Environmental and Social Risk and Impact, OS5: Land Acquisition, Restrictions on Access to Land and Land Use, and Involuntary Resettlement, OS7: Vulnerable Groups and OS10: Stakeholder Engagement and Information Disclosure. The highlighted three Environmental and Social operational safeguards were found to be relevant to the resettlement process of the proposed project;
* The Environmental and Social Guidance Notes (ISS Guidance Notes), which are tools that provide technical guidance for the Bank and its Borrowers on specific methodological approaches, Good International Industry Practice (GIIP) and standards relevant to meeting the requirements of the OSs. The relevant ones are Borrower Guidance Note for E&S Operational Safeguard 1, 5, 7 and 10 as well as Borrower Guidance Note on Gender in E&S Operational Safeguard diligence

### Operational Safeguard OS1: Assessment and Management of Environmental and Social Risk and Impact

The Operational Safeguard (OS1) requires that all AfDB-supported operations be screened and assessed for their environmental and social impacts and risks. This includes impacts related to gender, climate change, and vulnerability within their areas of influence.

OS1 mandates that stakeholder participation be integral to the consultation process, ensuring that affected communities and stakeholders receive timely information in suitable formats about AfDB operations. Additionally, it requires meaningful consultation on issues that may impact them.

Another objective for OS1 is for operations to ensure the effective management of environmental and social risks in projects during and after implementation and contribute to strengthening regional member country systems for environmental and social risk management by assessing and building their capacity to meet AfDB requirements set out in the Integrated Safeguards System.

The Livelihood Restoration Plan for this project involves the assessing of potential socio-economic impacts and ensuring that their best mitigation measures align with the provisions of Operational Safeguard 1.

### Operational Safeguards OS5: Land Acquisition, Restrictions on Access to Land and Land Use, and Involuntary Resettlement

Environmental and Social Operational Safeguard (OS) 5 recognizes that project-related land acquisition, restrictions on land access or land use, and loss of property/assets can have adverse impacts on communities and persons. Project-related land acquisition and restrictions on land use may cause physical displacement (relocation, loss of residential land or loss of shelter), economic displacement (loss of land, assets, or access to assets, leading to loss of income sources or other means of livelihood), or both. The term ‘involuntary resettlement’ refers to both of these impacts and the processes to mitigate and compensate for them.

Displacements of resettlement is considered involuntary when affected persons or communities do not have the right or genuine opportunity, free from coercion or intimidation, to refuse land acquisition or restrictions on land access or use that result in loss of assets or displacement.

The specific objectives of this OS 5 mirror the objectives of the involuntary displacement / resettlement policy:

* To avoid involuntary resettlement where feasible, or minimize resettlement impacts where involuntary resettlement is deemed unavoidable after all alternative project designs have been explored.
* To ensure that resettlement plans and activities are informed by social assessments including gender issues.
* To avoid forced eviction.
* To mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by;
  + Providing timely compensation for loss of assets at full replacement cost.
  + Providing sufficient resettlement assistance under the project to support displaced persons in their efforts to improve, or at least restore, their livelihoods and living standards, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.
* To establish a mechanism for monitoring the performance and effectiveness of involuntary resettlement activities that result from project activities, and for remedying problems as they arise
* To ensure that resettlement activities are planned and implemented with the appropriate disclosure of information, meaningful consultation, and the informed participation of those affected.

Again, the OS5 categories the project affected people into three groups which are;

* Persons who have formal legal rights to land or other assets recognized under the laws of the country concerned. This category generally includes people who are physically residing at the project site and those who will be displaced or may lose access or suffer a loss in their livelihood as a result of project activities;
* Persons do not have formal legal rights to land or other assets at the time of the census or evaluation but can prove that they have a claim that would be recognized under the customary or national law in the country. This category may include people who may not be physically residing at the project site, or persons who may not have any assets or direct sources of livelihood derived from the project site, but who have spiritual and/or ancestral ties with the land and are locally recognized by communities as customary inheritors
* Persons who have no recognizable legal right or claim to the land they are occupying in the project area of influence and who do not fall into either of the two categories described above.

This requirement is relevant to the project since involuntary economic displacement is anticipated, those whose seasonal agricultural fields and fruit trees will be impacted will need to be compensated and their livelihoods restored, or bettered. Also to adhere with the Operational Safeguards OS5 the gap analysis has been done whereby gap filling measures have been proposed.

### Operational Safeguard OS7: Vulnerable Groups

Through the requirements of this OS, the Bank encourages Borrowers to observe international human rights norms, standards, and best practices, and to reflect in Bank operations national commitments made under, inter alia, international human rights covenants and the African Charter of Human and Peoples’ Rights.

Vulnerability is not an inherent characteristic of people and does not occur in a vacuum. Women, for instance, are not inherently more vulnerable than men; however, discrimination, entrenched social roles and attitudes, poverty, and lack of access to decision-making can weaken their resilience and render them vulnerable to adverse project risks and impacts.

### Operational Safeguard OS10: Stakeholder Engagement and Information Disclosure

The Environmental and Social Operational Safeguard (OS) 10, recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social (E&S) sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation.

Stakeholder engagement is an inclusive process conducted throughout the project life cycle. When properly designed and implemented, it supports the development of strong, constructive, and responsive relationships that are important for successful management of a project’s E&S risks.

This OS must be read in conjunction with OS1. Where projects involve involuntary resettlement, vulnerable groups, the Borrower shall also apply the special disclosure and consultation requirements set out in OS5, and OS7.

## Zambian Legal Framework

Although there is no specific law pertaining to involuntary displacements or resettlement in Zambia, there still exist several legislations that provide guidance regarding legal provisions for displacements and resettlement. For land take and displacement of people, specific attention was drawn to two Zambian laws that were applicable to land tenure, compensation, and displacement in this project, namely:

* Chapter 1 of the Constitution of Zambia; and
* The Lands Acquisition Act Chapter 189.

### The Constitution of the Republic of Zambia

The Zambian Constitution recognizes certain fundamental rights of citizens which are relevant to the project:

**Article 11:** states that every person in Zambia irrespective of race, place of origin, political opinions, colour, creed, sex, or marital status, is entitled to fundamental right to life, liberty, security of the person and the protection of the law, freedom of conscience, expression, assembly, movement, association, protection of young persons from exploitation, protection for the privacy of his home and other property and from deprivation of property without compensation.

**Article 16:** provides that property of any description shall not be compulsorily taken possession of, and interest in or right over property of any description shall not be compulsorily acquired, unless by or under the authority of an Act of Parliament which provides for payment of adequate compensation for the property or interest or right to be taken possession of or acquired.

**Article 23:** guarantees protection from discrimination on the ground of race, tribe, sex, place of origin, marital status, political opinions, colour or creed.

### Lands Acquisition Act Chapter 189

Section 3 of the Lands Acquisition Act empowers the President of the Republic to compulsorily acquire property. Sections 5 to 7 of the Act provides for the issuing of notices to show the intention to acquire, notice to yield up property and to take up possession. Section 10 of the Act provides for compensation as consisting of such moneys as may be agreed upon.

CEC lawfully acquired the land comprising the Project site from the state. In addition, CEC had ownership to the Project land by way of a wayleave right as provided for under the Electricity Act, cap 433 of the Laws of Zambia which was granted to them in August 1964. In this case, the common practice was for CEC to request the state to issue notices to vacate, to the squatters (PAPs) who had encroached on the project land. The above two pieces of legislation form the basis of compensation requirements necessary to fulfill Zambia’s regulatory requirements. However, the nature of the project compels CEC to also satisfy the requirements of PS5 of the IFC standards.

### Land Tenure and Zoning

There are three land tenure systems in Zambia namely, state, traditional and municipal lands. Generally, land ownership in the country is on leasehold basis with periods ranging between 14 to 30 years for municipal land and ninety-nine (99) years for state land. Traditional land is generally not held on title unless on recommendation of the local traditional leaders that it is converted to state land and then a ninety-nine-year lease may be issued.

The ownership of land comprising the Project site is vested in the interest of CEC under statutory leasehold for an unexpired term of 99 years effective October 2018. Before then, CEC had the wayleave right for a radius of 200 – 400m along the CSS129 transmission line which was granted to them in August 1964 (as per subsection 14 of the Electricity Act, cap 433) when the company was trading as Rhodesia Congo Border Power Corporation. This implies that CEC have owned the project land for 55 years, which is longer than the period indicated by some PAPs who claimed to have been practicing seasonal agriculture on Project land. These PAPs had been using the project land illegally and none of them produced any proof of legal ownership for any part of the Project Land.

## Comparison of International and National Standards

The LRP identified the major points of divergence between the Zambian and international standards as related to economic displacements (see Table 1), with the goal of identifying the specific measures required to meet international standards (see Table 2).

Figure 3.4‑1: Comparison of National and International Standards

|  |  |  |
| --- | --- | --- |
| **Aspect** | **Zambian Legislation** | **International best practice** |
| Consultation | The Environmental Management Act No. 12 of 2011 requires rigorous consultation with interested and affected parties for any developmental project as part of the ESIA process which informs the decision‐making process. | Requires that livelihood restoration  / resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected.  Consultation processes should ensure that the perspectives and interests of women and other vulnerable groups are adequately considered. Requires the establishment of a grievance mechanism for managing concerns in a timely fashion.  All livelihood restoration planning, implementation, monitoring, and evaluation must take place with the full, informed participation of PAPs.  Negotiations between client and PAPs lead to negotiated displacements rather than forceful removal. |
| Livelihoods | The focus of legislation is on fair compensation for displaced assets. Restoration of livelihoods not considered. | Project impacts on livelihoods are the central focus of IFC PS5. Compensation for loss of assets at full replacement cost and other assistance to improve or at least restore standards of living and livelihoods are required.  Monitoring of livelihood restoration is required. |
| Vulnerable groups | The Zambian constitution reinforces the right of women to the | IFC PS5 requires paying particular attention to the impacts on the poor and vulnerable. Persons identified as  vulnerable should be assisted to fully |

|  |  |  |
| --- | --- | --- |
|  | improvement in their living conditions, access to healthcare and wellbeing. | participate in the planning process, to understand their options for displacement and compensation, and encouraged to choose those with the lowest risk. Care must be taken to ensure that these groups are left better off. |
| Grievances | Not directly included in the Zambian legislation.  However, affected parties are free to access judicial or administrative remedies. | The establishment of a grievance mechanism consistent with IFC PS1 is a key requirement of IFC PS5. The mechanism should seek to resolve concerns promptly, using an understandable and transparent process that is culturally appropriate, readily accessible, at no cost to the party that originated the concern, and does not impede access to judicial or administrative remedies. |
| Eligibility | Occupants of land without title can only be compensated if the land is under customary rights. Occupants of state or private land without title are regarded as squatters and moved without any compensation.  Crops and other plants on state or private land are not eligible for compensation. PAPs maybe allowed to harvest and vacate thereafter. | A census is carried out to collect appropriate socioeconomic baseline data to identify the persons who will be displaced by the project and determine who will be eligible for compensation and assistance. All parties with and without a legal claim to the property or assets displaced are eligible for compensation. |
| Entitlements | Both the Zambian Constitution and the Lands Acquisition Act emphasizes in‐cash payment as the only entitlement in cases of displacements. | Payment of in‐kind compensation is generally preferred over in‐cash compensation. Compensation for loss of assets is provided at replacement cost and with the goal of improving or at least restoring the livelihoods and standards of living of displaced persons. |

|  |  |  |
| --- | --- | --- |
| Gender and Eligibility/ Entitlements | The Zambian constitution gives men and women equal rights to gain possession of and own land subject to conditions determined by the law.  No specific mention of women in laws concerning allocation / reallocation of national domain lands or expropriation. | IFC PS5 requires that women’s perspectives are obtained, and their interests factored into all aspects of resettlement planning and implementation. Addressing livelihood impacts may require intra‐ household analysis in cases where women’s and men’s livelihoods are affected differently. Women’s and men’s preferences in terms of compensation mechanisms should be explored.  Documentation of ownership or occupancy and compensation arrangements should be issued in the names of both spouses or heads of households, and other resettlement assistance, such as job opportunities, should be equally available to women and adapted to their needs. |
| Crop Compensation | Not directly provided for in the Zambian legislation. However, PAPs are allowed to harvest the crop and vacate the land thereafter. | Crops will be compensated at full replacement cost.  Economically displaced persons who are without legally recognizable claims to land will be entitled to compensation at full replacement cost for lost crops. |
| Compensation of Communal resources | Communal land and infrastructure belong to the State. No compensation is paid out once land is sold out to a private owner.  Squatters are asked to vacate on their own or face forced removal. | The provisions of IFC PS5 apply to communities and individuals. PAPs will be offered compensation for economic displacements and other assistance to help improve or restore standards of living or livelihoods. |
| Monitoring and Evaluation | Not included in the Zambian legislation | Monitoring and evaluation must form a component of all livelihood restoration plans. The monitoring  program must pay particular |

|  |  |  |
| --- | --- | --- |
|  |  | attention to those who are poor and vulnerable so as to track their standards of living and effectiveness of compensation plans, assistance, and livelihood restoration. |

Figure 3.4‑2: Measures Required to Meet International Standards

|  |  |
| --- | --- |
| **International best practice** | **CEC –InnoVent (GaN) Commitment** |
| Prepare a Livelihood Restoration Plan for all economic displacements. | The Proponent has prepared this Livelihood Restoration Plan in accordance with the international standards described above. |
| Improve or at least restore livelihoods of affected population. | Section 10 of this LRP details the livelihood and community development programs for all affected parties. |
| Improve living conditions among displaced persons. | The Proponent committed itself to providing opportunities for the improvement of the quality of life and living conditions of PAPs as part of the Livelihood Restoration Plan. This has been in the form of appropriate compensation amounts, relocation assistance and priority of employment opportunities. With regard to compensations, the PAPs were given cash equivalent to the value of displaced crop, a relocation allowance, and an amount to rent equivalent pieces of land for 3 seasons from nearby private landowners. Alternative land was sourced for the most vulnerable among the PAPs on which they have been allowed to farm for as long as they live. |
| Absence of legal title not a barrier to compensation. | All land users enumerated in the surveys at the time of the established cut‐off date were considered entitled to compensation for eligible impacts, including loss of access routes, crops, and livelihoods. |
| Include special measures to allow disadvantaged groups to participate meaningfully in the displacement planning process, to access displacement  assistance, and to benefit from | The LRP process identified the most vulnerable among the PAPs and were given additional assistance as outlined in **section 10.0** of this LRP. |

|  |  |  |
| --- | --- | --- |
| Project opportunities. | development |  |
| Ensure that PAPs are | | The Proponent proactively engaged all PAPs by way of public |
| appropriately engaged in the | | meetings as well as one-on-one discussions. |
| design and implementation of | |  |
| displacement activities. | |  |
| Ownership or occupancy and | | The Proponent conducted continuous consultations with |
| compensation arrangements | | affected persons to determine appropriate measures for |
| should be issued in the names of | | ensuring men and women are equally considered for eligibility |
| both spouses and heads of | | and entitlements. |
| households. | |  |

## Scope of Displacement of Agricultural Fields and Livelihood Restoration

The proposed Solar PV Project requires the whole 56 ha land comprising the project site. The Project site comprises titled land owned by the Copperbelt Energy Corporation Plc. The Developer (GaN) is not seeking access to any additional land, either customary or state. A Socio-Economic Baseline Survey which was conducted on the Project site established a total of 26 seasonal agricultural fields and three access routes, including footpaths used as shortcuts by the public to access land parcels located east of the project site. All agricultural fields have been displaced with affected persons fully compensated. The PAPs were compensated for the loss of agricultural fields (or fruit trees) and disruption in livelihoods in accordance with the Zambian legislative requirements and applicable international standards.

Successful compensations were arrived at after a rigorous consultative. Consultations involved stakeholders at different levels and provenance (communities, local authorities, Government Departments at district level), for the development and implementation of an LRP, with clearly defined roles and responsibilities. Compensation measures, valuation of agricultural fields (or assets) and estimated costs as well as an analysis of the impacts of displacements have been included in this LRP.

# Profile of Project Affected Persons (PAPs)

A socio-economic survey was conducted to understand the composition of the PAPs, their socio- economic wellbeing, asset ownership and their alternative income sources. The socio-economic surveys were also aimed to characterize the PAP’s livelihoods, land use and asset ownership patterns, incomes, and expenditures as well as their other earnings.

### Survey Methodology and Approach

The surveys were conducted on *all Project Affected Persons* with agricultural fields on the project land. The following were the various methods used:

**Field Surveys:** Conducted by the Developer to establish nature, approximate number of assets and owners of the affected assets in February 2019 which provided a scope of work for the consultant. Further surveys were conducted in April/May 2019 by an independent Consultant and the Department of Agriculture to establish the number and extent of fields on the project land as well as the value of the crops.

**Face to Face Interviews:** The PAPs were interviewed on a one-to-one basis by the independent consultant and the Proponent in April and August 2019 to gather some baseline information. During these interviews, the consultant used open-ended questions. To be more elaborate, descriptive questions were used to express the intended objective of the question. Conversely, close-ended questions were used for data that needed a PAP to give figures or list of items (Please see questionnaire and additional socio-economic data capturing forms in Appendix 3 of this document and Appendix 10\_2 of the EPB).

**Telephone Interviews:** Telephone interviews were not an initial option, however some PAPs who requested to consult for certain information they could not give on the day of the interview were contacted by phone. Some PAPs were not sure of their incomes and expenditures and therefore requested to be contacted later. These were reached on the phone. The phone conversation became a continuation of the face-to face interview that had been initiated earlier.

**Focus Group Discussions:** Focus group discussions were conducted by the project team to consult on various aspects that affected a typical community. PAPs that had one aspect in common were interviewed as a group. For example, those that were identified to farm in a particular portion of the Garneton North Project Site were gathered separate from those that were known to be farming on the other side. Furthermore, PAPs that were identified under those renting the Project land from some individuals were grouped as a focus group. During stakeholder engagement meetings, different focus groups could be requested to remain behind for a group interview. These interviews were conducted between April and September 2019.

**Direct Observation:** Direct observation played a role as well during the data collection exercise. Several observations were made to confirm the information that was presented by the PAPs. When capturing information on disability, the interviewers could do more observation and tactfully confirm

the interviewee was physically sound. According to the cultural norms of the land, it is disrespectful to ask a person if they are physically disabled or not when the disability is clear to discern, thus direct observation played a key role in that aspect.

**Document Reviews:** Secondary information was obtained from different publications such as Living conditions surveys conducted by the Zambia Statistical Agency (formerly Central Statistics Office). Other guideline information and data were gotten from the World Bank Publications.

### Interviews with Community Leaders:

At different stages of the survey, community leaders were consulted to collect more information about the PAPs, this served two purposes:

1. Identification of Assets and owners of those assets in the project area
2. Verification of the data collected especially in relation to land allocation and boundaries was done through the community leaders
3. PAPs could not have certain information about their communities, therefore community leaders were consulted to provide such information

The documented information has been made available in a working database which should be updated whenever new information is collected (Please see questionnaire and additional socio-economic data capturing forms in Appendix 3 of this document and Appendix 10\_2 of the EPB).

### Consultations with Government Departments and Other Stakeholders:

* + The Proponent and the Consultant held consultative meetings with the Department of agriculture in April 2019.
  + The Proponent held a consultative meeting with the Zambia Police in September 2019.
  + The Proponent held consultation meetings with the Local Authority (Kitwe City Council) in April and July 2019.
  + The proponent made several correspondences with quasi-government institutions including the Road Development Agency, Nkana Water and Sewerage Company, Zambia Railways Limited, etc. (please see letters of correspondence in appendix 9 of the EPB).

### Survey Limitations

* + - * Not all the Project Affected Persons were present at all times during surveys.
      * Due to limited education levels of some of the PAPs, information had to be completed on their behalf during the survey.
      * Some PAPs may have underestimated or overestimated their levels of income or expenditure.
      * The PAPs farming on alternative land outside the project area could not provide specific figures of what they earn from the alternative land.
      * Some PAPs reported quantities of their harvest more than what the Ministry of Agriculture Experts evaluated (Beauty Salachi, Kingford Mumba, Mathew Kaposa, Florence Titima and Beatrice Katongo).
      * Some PAPs did not attend all the data collection sessions.

### Quality Assurance on Data Collection

To ensure quality in the data collected during the process, the following approach was adopted:

* For standardized data collection, questionnaires (Appendix 10\_1 of the EPB) and Pre- headed data collection sheets (Appendix 10\_2 of the EPB) were used.
* Pre-meeting trainings were held internally for all interviewers to adopt a common structured way of asking questions, to avoid ambiguity and standardizing the information collected. For example, annual expenditure on Meals (food) by a PAP would be asked from the perspective of weekly expenditure and extrapolated.
* The interviewers used the local language spoken in the Garneton area mainly Icibemba, as much as possible. A few PAPs were not fluent in Icibemba but could speak Lunda, Luvale and Kaonde. The interviewers chosen had a varied ethical background and could speak and understand multiple languages.
* To maintain the same criteria, PAPs were asked to give an indicative figure of their expenditure on personal services and entertainments on a monthly basis; by inquiring mostly about the number of times they go to the saloon, barbershop, laundry.

### Provenance of PAPs

Most of the local people who had encroached on the Project land for agricultural fields resided in Zambia and Kamatipa high density residential areas which all fall under Itimpi ward. The two residential areas are located about 1.5 – 4.5km southwest of the Project site. The local people from the two residential areas mostly go to the project land during the peak agricultural season on a daily basis.

### Size of land parcels used for seasonal agriculture on project land.

The project land comprises a 56 Ha piece of land. The land was encroached by a total of 26 individuals from surrounding local communities who practiced seasonal agriculture for field crops. Collectively, the PAPs only utilize a total of 5.34 Ha out of the 56 Ha total size of the project land. None of the PAPs had title or any legal document to claim ownership of any piece of Project Land. This background led to the conclusion that the overall impact of the project on livelihoods of the PAPs that have encroached the project land will be moderate to low.

### Land Use Patterns

As earlier explained, the project land represents a degraded Miombo characterized by fallow agricultural fields opened up by illegal encroachers who have since been displaced effective June 2020. The site also hosts a number of footpaths and access roads which are used to gain access to the private properties that are found on the eastern boundary of the site. Agreements have already been reached to displace and relocate these access routes.

### Mode of Access to Project Land

The project land is owned by CEC, and the PAPs who had encroached on it have accessed it on a commons access basis and they are fully aware that the project land belongs to CEC who had actively been clearing vegetation in a certain radius along the wayleave every season. Some of the PAPs who had cultivated on project land for relatively longer periods had falsely assumed ownership of the land and were illegally renting out part of the project land to other members of the community. Some of the PAPs indicated that they rent parcels of land on the project site from the PAPs who pioneered seasonal agricultural activities on project land (see Table 12).

### Immovable Assets

The project land comprises privately-owned land which is on title with no physical structures, homes, buildings, or social amenities. The only features of importance that were accommodated on site included seasonal agricultural fields with un-purposefully planted fruit trees of mango and guava. These trees were believed to have been planted through seed dispersal by humans (i.e. seeds thrown away by owners of crop fields during land preparation and field maintenance). All fruit trees falling within the crop fields were evaluated and compensated accordingly.

### Basic Information of PAPs

The census of PAPs conducted on the project land identified a total of twenty-six (26) people that were directly affected by the project through loss of agriculture fields. The population of PAPs comprised eighteen females and eight males. Out of the twenty-six PAPs, three were above 65 years of age, while twenty-three were below 65 years. The surveys did not encounter any PAP aged below 18 years, i.e. the age limit for one to be identified as an adult or minor in Zambia. The table below summarizes the basic information about the PAPs.

Table 3.5‑1: Summary of basic information of the PAPs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PAP**  **Identification**  **Code** | **Sex** | **Age (Yrs)** | **Age Group** | | **Marital Status** |
| **Adult 18 - 65** | **Adult ³65** |
| 1 | M | 32 | X |  | Married |
| 2 | M | 37 | X |  | Single |
| 3 | F | 48 | X |  | Married |
| 4 | F | 56 | X |  | Widowed |
| 5 | M | 65 |  | X | Married |
| 6 | F | 60 | X |  | Married |
| 7 | F | 52 | X |  | Married |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PAP**  **Identification**  **Code** | **Sex** | **Age (Yrs)** | **Age Group** | | **Marital Status** |
| **Adult 18 - 65** | **Adult ³65** |
| 8 | F | 61 | X |  | Married |
| 9 | F | 56 | X |  | Widowed |
| 10 | F | 41 | X |  | Married |
| 11 | M | 47 | X |  | Married |
| 12 | F | 29 | X |  | Married |
| 13 | M | 37 | X |  | Married |
| 14 | M | 58 | X |  | Married |
| 15 | F | 53 | X |  | Married |
| 16 | F | 48 | X |  | Married |
| 17 | F | 39 | X |  | Divorced |
| 18 | F | 65 |  | X | Widowed |
| 19 | F | 35 | X |  | Divorced |
| 20 | F | 69 |  | X | Widowed |
| 21 | M | 24 | X |  | Married |
| 22 | F | 25 | X |  | Married |
| 23 | M | 31 | X |  | Married |
| 24 | F | 35 | X |  | Divorced |
| 25\* | F | - | - | - | - |
| 26\* | F | - | - | - | - |

Source: CEC PAPs database

*X – means applicable*

*PAPs 25 and 26 were not available at the time of data capturing*

### Education Profile

The closest school to the project site is Lifesong school which offers both primary, secondary, and tertiary education. Public schools that are found near the project site include Garneton and St. Francis Secondary Schools and Mwambashi primary school. In order to understand the education profile of the PAPs, a close ended question was included in the questionnaire. A total of fifteen (15) PAPs were interviewed, out of which two indicated that they had attained tertiary level of education, seven of the PAPs reported to have attained secondary level education, while five PAPs had only attained primary level education. Only one out of the fifteen interviewed PAPs reported not to have attained any level of education. The table below summarizes the education profile of the PAPs.

Table 3.5‑2: Education Profile of PAPs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PAP**  **Identification**  **Code** | **Sex** | **Level of Education** | | | |
| **Primary** | **Secondary** | **Tertiary** | **None** |
| 1 | M | X |  |  |  |
| 2 | M |  | X |  |  |
| 3 | F |  |  |  |  |
| 4 | F |  |  |  |  |
| 5 | M |  |  | X |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PAP**  **Identification**  **Code** | **Sex** | **Level of Education** | | | |
| **Primary** | **Secondary** | **Tertiary** | **None** |
| 6 | F | X |  |  |  |
| 7 | F |  |  |  |  |
| 8 | F |  |  |  | X |
| 9 | F | X |  |  |  |
| 10 | F |  |  |  |  |
| 11 | M |  | X |  |  |
| 12 | F |  | X |  |  |
| 13 | M |  |  |  |  |
| 14 | M |  |  |  |  |
| 15 | F | X |  |  |  |
| 16 | F |  |  |  |  |
| 17 | F |  |  |  |  |
| 18 | F |  |  | X |  |
| 19 | F |  | X |  |  |
| 20 | F | X |  |  |  |
| 21 | M |  | X |  |  |
| 22 | F |  | X |  |  |
| 23 | M |  | X |  |  |
| 24 | F |  |  |  |  |
| 25 | F |  |  |  |  |
| 26 | F |  |  |  |  |

Source: CEC PAPs database

*X - means applicable*

*PAPs in shaded rows were not available at the time of data capturing.*Health Profile

The Garneton area falls under the jurisdiction of Kitwe District Health Board. The survey showed that most of the PAPs were in good health. Out of the twenty-one interviewed PAPs, 18 were in good health, one was disabled while two reported to have been having prolonged health challenges. The table below summarizes the health profile of the PAPs.

Figure 3.5‑1: Health Profile of PAPs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **PAP Identification**  **Code** | **Sex** | **Health Status** | | |
| **Health Challenges** | **Disabled** | **Physically Fit (Healthy)** |
| 1 | M |  |  | X |
| 2 | M |  |  | X |
| 3 | F |  |  | X |
| 4 | F | X |  |  |
| 5 | M |  |  | X |
| 6 | F |  |  | X |
| 7 | F |  |  | X |
| 8 | F |  |  | X |
| 9 | F |  |  | X |
| 10 | F | X |  |  |
| 11 | M |  |  | X |
| 12 | F |  |  | X |
| 13 | M |  |  | X |
| 14 | M |  | X |  |
| 15 | F |  |  | X |
| 16 | F |  |  |  |
| 17 | F |  |  | X |
| 18 | F |  |  | X |
| 19 | F |  |  | X |
| 20 | F |  |  |  |
| 21 | M |  |  | X |
| 22 | F |  |  | X |
| 23 | M |  |  |  |
| 24 | F |  |  | X |
| 25 | F |  |  |  |
| 26 | F |  |  |  |

*Source: Source: CEC PAPs database X - Means applicable*

*PAPs in shaded rows were not available at the time of data capturing.*

### Livelihood Sources

The livelihoods of the PAPs on the Garneton North Solar PV Park were in six categories namely, Agricultural activities from project land, agricultural activities outside the project land, petty trading/small businesses, family remittances, house rentals and formal employment. The table below summarizes the livelihood sources reported by the PAPs.

Table 3.5‑3: Livelihood sources among PAPs

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **PAP**  **Identification Code** | **Sex** | **Livelihood Sources** | | | | | |
| **Agric. Activities – Project**  **Land** | **Agric. Activity - Alternative**  **Land** | **Petty Trading / Small**  **business** | **Family Remittance** | **House Rentals** | **Formal Employment – Spouse** |
| 1 | M | Yes | No | Yes | No | No | No |
| 2 | M | Yes | Yes | Yes | No | No | No |
| 3 | F | Yes | No | No | No | No | No |
| 4 | F | Yes | No | No | No | No | No |
| 5 | M | Yes | No | No | No | No | No |
| 6 | F | Yes | Yes | Yes | No | No | No |
| 7 | F | Yes | No | No | No | No | No |
| 8 | F | Yes | No | Yes | No | Yes | No |
| 9 | F | Yes | No | yes | Yes | No | No |
| 10 | F | Yes | No | No | No | No | No |
| 11 | M | Yes | No | No | No | No | No |
| 12 | F | Yes | No | No | No | No | No |
| 13 | M | Yes | Yes | No | No | No | No |
| 14 | M | Yes | No | Yes | No | No | No |
| 15 | F | Yes | No | No | No | No | No |
| 16 | F | Yes | No | No | No | No | No |
| 17 | F | Yes | No | No | No | No | No |
| 18 | F | Yes | Yes | No | No | Yes | No |
| 19 | F | Yes | No | Yes | No | No | No |
| 20 | F | Yes | No | Yes | No | No | No |
| 21 | M | Yes | No | No | No | No | Yes |
| 22 | F | Yes | No | No | No | No | Yes |
| 23 | M | Yes | No | No | No | No | Yes |
| 24 | F | Yes | No | No | No | No | No |
| 25\* | F | Yes |  |  |  |  |  |
| 26\* | F | Yes |  |  |  |  |  |

*Source: Source: CEC PAPs database*

***\**** *PAPs 25 and 26 were not available at the time of data capturing*

The livelihood sources for the PAPs were further categorized into two, i.e. on-farm and off-farm activities. Thirteen (50%) of the PAPs were dependent on *on-farm activities* while the other 50% were dependent on both agricultural practice and *off-farm livelihoods*. Four of the PAPs reported to be cultivating on land outside of the project land.

Table 3.5‑4: Income from Alternative Land

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **PAP**  **Identification Code** | **Gender** | **Agriculture Activity Outside Project Land** | **Size of Field** | **Crops Cultivated** |
| 2 | M | Yes | 0.25ha | Vegetables |
| 6 | F | Yes | Not sure | Did not disclose |
| 13 | M | Yes | Not sure | Did not disclose |
| 18 | F | Yes | 0.25 ha | Vegetables |

*Source: Source: CEC PAPs database*

Although the initial data collected indicated that at least 4 of the PAPs were also cultivating on land outside the CEC project land, two of them would not disclose the size and types of crops cultivated when interviewed for the second time. It was not clear why they did not disclose it.

### On-farm Activities

The survey clearly showed that the on-farm activities practiced on the project land formed part of the livelihoods of the PAPs identified on the Garneton North Solar PV Site. The PAPs did not own any land of their own either customary or titled land. The PAPs gained access to the project land because they believed that it was idle, and the legal owner had no immediate use for it. The PAPs cultivated different types of crops including maize, groundnuts, cassava, beans, sweet potatoes, and vegetables. A few of them had fruit trees for mangoes and guavas.

### Off-farm Livelihoods

The off-farm activities represented another livelihood source for the PAPs. Off-farm activities included petty trading/small businesses and formal employment where a spouse or a member of a family is in formal employment and receives a monthly salary. Other livelihood sources which may be put under off-farm activities include remittances and family support from relatives and older children as well as house rentals in the case of PAPs who were renting out rooms or housing quarters which they owned.

### Disaggregation of Agricultural Produce

The common practice among PAPs was to either keep whole of their produce from the major crop (maize) or sale everything for cash and later start buying to meet their daily requirements. Literally the whole of the yield from other crops (minor) was retained for home consumption. The table below summarizes the disaggregation of the components of the major crop produce sold for cash and the part retained for home consumption.

Table 3.5‑5: Disaggregation of major crop produce

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PAP**  **Identification Code** | **Type Crop 1 (Major Crop)** | **Type of Crop 2** | **Type of Crop 3** | **Type of Crop 4** | **Quantity of Major crop Harvested / Annum (kg- Major Crop)** | **Quantity of Harvest Sold**  **/Annum (kg-Major Crop)** | **Quantity of Harvest reserved for Home Consumption**  **/ Annum (kg-Major Crop)** | **Source of Staple food (Harvested, Purchased)** |
| 1 | Maize | Okra | Eggplant | Pumkin Leaves | 300 | 300 | 0 | Purchase |
| 2 | Maize | X | X | X | 325 | 0 | 325 | Harvested |
| 3 | X | X | X | X | X | 0 | 500 | Harvested and  purchased |
| 4 | Cassava | X | X | X | 100 | 0 | 100 | Purchased |
| 5 | Maize | Groundnuts | X | X | 350 | 0 | 350 | Harvest |
| 6 | Maize | X | X | X | 475 | 175 | 300 | Harvested |
| 7 | Maize | Groundnuts | X | X | 300 | 0 | 250 | Harvested |
| 8 | Maize | Groundnuts | Sweet Potatoes | X | 275 | 225 | 50 | Harvested |
| 9 | Maize | Groundnuts | X | X | 50 | 0 | 50 | Harvest |
| \*10 | Maize | X | X | X | 275 | 750 | 750 | Harvested |
| 11 | Maize | Mbambara Nuts | Beans | Groundnuts | 500 | 0 | 500 | Harvested |
| \*12 | Maize | Groundnuts | Beans | X | 300 | 250 | 500 | Harvested |
| 13 | Maize | Sweet Potatoes | X | X | 250 | 0 | 250 | Harvested |
| \*14 | Maize | Groundnuts | X | X | 350 | 0 | 500 | Harvested |
| \*15 | Maize | X | X | X | 350 | 250 | 500 | Harvested |
| #16 | Maize | X | X | X | 150 |  |  |  |
| 17 | Maize | Mbambara Nuts | Sweet Potatoes | X | 800 | 500 | 300 | Harvested |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 18 | Maize | X | X | X | 275 | 1000 | 800 | Harvested |
| 19 | Maize | X | X | X | 175 | 500 | 0 | Harvested |
| #20 | Maize | X | X | X | 200 |  |  |  |
| 21 | Maize | X | X | X | 25 | 0 | 300 | Harvested |
| 22 | Maize | X | X | X | 25 | 0 | 25 | Purchased  and harvested |
| 23 | Maize | Groundnuts | X | X | 100 | 0 | 500 | Harvested |

*Source: CEC Database and Agric Report*

*X – Means not applicable Staple food: This refers to Maize* ***Notes***

* *The source of the Quantities on Major Crops was the Agric Report whereas Quantity on consumptions and crops sold was declared by PAPs during interviews.*
* *PAP 3 declared that she harvested 500kg of maize every season during the interview, however, during the evaluation by Ministry of Agriculture, her land had not been cultivated (Fallowed field)*
* *PAP 7 could harvest 300kg of maize, 50kg is given to Farm Labourers during harvest time.*
* *PAP 18 had more than the maximum yield of maize from the piece of land on the Project site. It’s possible that this came from the other farm disclosed outside the project land or another farm not disclosed during the interview*

*# PAP 16 and 20, were not available during the interview*

*\*PAPs 15, 21, 14, 12, 23, 10, and 19 declared more quantity of maize for consumption than what can possibly be harvested according to Ministry of Agriculture. It is possible that they overestimated what they consume, or the extra maize could be from undisclosed alternative fields.*

### Income Levels

Income levels can give an idea about the economic wellbeing of people. The total annual income of PAPs on the Garneton North Solar project site ranged from ZMW440 to ZMW33,725. Given the national minimum wage of ZMW980 per month (ZMW11,760/annum reported for the year 2019), it could be said that only 38.5% of the PAPs earned up to or higher than the national minimum wage, suggesting that the majority were relatively poor. About 16.7% of the PAPs stated to have a yearly income of ZMW5,000 or less. A good number of PAPs (37.5%) had a yearly income of between ZMW5,000 and ZMW10,000. Only 4.17%of the PAPs had a yearly income above ZMW20,000. The table below summarizes the income levels of the PAPs.

Table 3.5‑6: Annual income levels of PAPs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PAP**  **Identification Code** | **Sex** | **Value of Agric Produce on Project Land**  **(ZMW)** | **Income from Other Sources** | **Ratio, Income from Agric Produce on Project Land: Income from Other**  **Sources** | **Total Income (ZMW)** |
| 1 | M | 985 | 7,000 | 14.1 | 7,985 |
| 2 | M | 715 | 15,000 | 4.8 | 15,715 |
| 3 | F | Fallow field | 6,800 | - | 6,800 |
| 4 | F | 240 | 3,100 | 7.7 | 3,340 |
| 5 | M | 805 | 13,200 | 6.1 | 14,005 |
| 6 | F | 1,045 | 18,336 | 5.7 | 19,381 |
| 7 | F | 690 | 7,600 | 9.1 | 8,290 |
| 8 | F | 835 | 1,200 | 69.6 | 2,035 |
| 9 | F | 145 | 5,600 | 2.6 | 5,745 |
| 10 | F | 605 | 4,800 | 12.6 | 5,405 |
| 11 | M | 1,325 | 32,400 | 4.1 | 33,725 |
| 12 | F | 745 | 18,000 | 4.1 | 18,745 |
| 13 | M | 1,000 | 12,800 | 7.8 | 13,800 |
| 14 | M | 980 | 7,400 | 13.2 | 8,380 |
| 15 | F | 770 | 5,000 | 15.4 | 5,770 |
| 16 | F | 330 | 7,200 | 4.6 | 7,530 |
| 17 | F | 2,875 | 3,200 | 89.8 | 6,075 |
| 18 | F | 605 | 14,000 | 4.3 | 14,605 |
| 19 | F | 385 | 1,000 | 38.5 | 1,385 |
| 20 | F | 440 | - | - | 440 |
| 21 | M | 35 | 15,600 | 0.2 | 15,635 |
| 22 | F | 35 | 14,700 | 0.2 | 14,735 |
| 23 | M | 255 | 15,800 | 1.6 | 16,055 |
| 24 | F | 980 | 4,800 | 4.9 | 5,780 |
| 25 | F | 275 | - | - | - |
| 26 | F | 550 | - | - | - |

*Source: Source: CEC PAPs database*

*\*\* PAPs 20, 25 and 26 were not available at the time of data capturing*

*# PAP 3 had a fallowed field; hence she is not considered for this analysis*

***Note 1****: Income from other sources encompasses income from sources other than agricultural activities from project land including income generated from petty trading/small businesses, house rentals, remittances or support from family members as well as income from agricultural activities practiced outside the project land.*

***Note 2:***

*Because of the non-availability of data from PAPs 20, 25 and 26 and a fallowed field from PAP 3, the sample size used was 21 PAPs instead of 26 PAPs.*

The annual average income generated by PAPs from agricultural activities that were practiced on the Project land was ZMW706, this was by far less than the annual average income from other sources which was reported to be ZMW9772.33 and translated to an average 6.9% PAPs’ dependence on seasonal agricultural practices on the Project land. This led to the conclusion that most of the PAPs did not solely depend on the seasonal agricultural practices for their livelihoods. This information also indicated that the major component of the PAPs’ income came from off-farm activities. This was also supported by the sizes of the fields owned by the PAPs on the project land, i.e. quarter of a hectare or less in most cases. However, for three of the PAPs it was clear that a major part of their livelihood came from agricultural practices. These are PAPs 8, 17 and 19.

### Expenditure

Expenditure patterns provide an indication of the standard of living a person might have. PAPs reported expenditures in the range of ZMW60 to ZMW65,410 per annum on things such as personal upkeep and household groceries (Food/Meals), house rent, school fees for children, voluntary offerings at church, purchase of alcoholic beverages, communication, and entertainment. The model expenditure category ranged from ZMW1,874 to ZMW98,170 with the lowest expenditure being on house maintenance and the highest being on education. About 38.1% of the PAPs spent less than ZMW5,000 per year. About 47.62% of the PAPs spent above the international poverty benchmark of

$1.25 (exchange rate of ZMW13.2 per $1 on 5/11/2019) per day. About 28.57% of the PAPs indicated to have spent more than the income which they had declared. This implied that the PAPs had some income sources which were not disclosed or not considered to be income in their opinion or could have also been an error in estimates.

Table 3.5‑7: Annual Expenditure Patterns

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **PAP**  **Identification**  **Code** | **Sex** | **Total Income (ZMW)** | **Annual Expenditure (ZMW)** | **Daily Expenditure (USD)** |
| 1 | M | 7,985 | 5,975 | 1.68 |
| 2 | M | 15,715 | \*2,464 | 3.30 |
| 3 | F | 6,800 | \*2,800 | 1.43 |
| 4 | F | 3,340 | \*60 | 0.70 |
| 5 | M | 14,005 | 10,290 | 2.94 |
| 6 | F | 19,381 | 5,320 | 4.08 |
| 7 | F | 8,290 | \*3,640 | 1.74 |
| 8 | F | 2,035 | #0 | 0.43 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **PAP**  **Identification**  **Code** | **Sex** | **Total Income (ZMW)** | **Annual Expenditure (ZMW)** | **Daily Expenditure (USD)** |
| 9 | F | 5,745 | 14,280 | 1.21 |
| 10 | F | 5,405 | 7,025 | 1.14 |
| 11 | M | 33,725 | 18,270 | 7.09 |
| 12 | F | 18,745 | 8,650 | 3.94 |
| 13 | M | 13,800 | 12,210 | 2.90 |
| 14 | M | 8,380 | \*2,644 | 1.76 |
| 15 | F | 5,770 | 13,210 | 1.21 |
| 16 | F | 7,530 | #0 | 1.58 |
| 17 | F | 6,075 | \*1,570 | 1.28 |
| 18 | F | 14,605 | 65,410 | 3.07 |
| 19 | F | 1,385 | \*1,530 | 0.29 |
| 20 | F | 440 | #0 | 0.09 |
| 21 | M | 15,635 | \*3,246 | 3.29 |
| 22 | F | 14,735 | 25,600 | 3.10 |
| 23 | M | 16,055 | #0 | 3.38 |
| 24 | F | 5,780 | 7,664 | 1.61 |
| 25\* | F | - | #- | - |
| 26\* | F | - | #- | - |

*Source: CEC PAPs database*

*\* - PAPs with expenditure less than ZMW5000 per annum #-PAP either not available at the time of interview*

***Notes on Table 9:***

* *PAP 16, 20, 23, 25 and 26 were not available at the time of data capturing, and so the sample size for analysis was 21 PAPs.*
* *PAP 8 reported no expenditure because her expenditure is borne by other family members who stays with her.*
* *PAP 23 was not available at the time of the interview although was later interviewed and reported an expenditure of ZMW21,676 which has not been considered in this analysis.*

From the above table, it appeared that fourteen of the PAPs had higher annual income than expenditure. This indicated that they had surplus income to save. This was also attributed to inaccuracies in estimates of expenditure. For seven of the PAPs, it appeared that their expenditure is higher than their income. This may mean that these PAPs underdeclared some of their income, maybe for the same reasons as above or were looked after by other members of the household as in the case of PAP 8.

The largest expenditure for households was on education, followed by food, while the least was spent on purchase of clothing. The table below presents information about household expenditure on selected items.

Table 3.5‑8: Annual Average Expenditure Pattern of PAPs

|  |  |
| --- | --- |
| **Expenditure Items** | **Amount (ZMW)** |
| Food/Meals | 1,831.33 |
| Remittances to church | 737.72 |
| Alcoholic beverages/ Non-alcoholic Beverages | 167.86 |
| Communications | 561.19 |
| Personal Services/Entertainment | 299.05 |
| Education (School fees) | 4,674.77 |
| Rent | 968.10 |

From Table 3.6-8, the highest expenditure was on education, followed by food and the least was spent on beverages.

According to the 2022 Zambia Statistics Agency “*poverty assessment in Zambia”*, the monthly per capita expenditure for a family of six people in Zambia is ZMW1,522.40. (ZAMSTAT, 2022). The annual income generated from agricultural activities on project land ranged from ZMW35 to ZMW2,875, this implied that all PAPs’ earnings from agricultural activities were far less than the minimum monthly expenditure of a family of six people on the Copperbelt Province and cannot sustain them without alternative livelihood sources.

### Savings

The differences between income and expenditures of the PAPs indicates that 67% of the PAPs were saving something from their total income. The saving levels ranged between ZMW440 and ZMW15,455 per annum. The income – expenditure data also gave insights that 33% of PAPs declared less income than what they earned.

### Asset Ownership Among PAPs

Ownership of various property is another pointer to the standard of living of a household/community. The survey showed that bicycles, television sets and radio were among the common household assets owned by a good number of PAPs. For example, only 26.6% of the PAPs reported not to own a radio and 52.38% reported that they did not own a television set.

According to the socio-economic survey, 57.14% of the PAPs did not own houses and hence lived in rented homes where they paid rent averaging ZMW80 per month. The survey also showed that only 23.8% of the PAPs owned residential or commercial plots outside the project area. This is typical of many urban and peri-urban dwellers in Zambia, who in most cases rely on rented houses or agricultural land.

Table 3.5‑9: Asset ownership among PAPs

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PAP Identification Code** | **No. of Houses** | **Plot (Residential, commercial)** | **Livestock (Goats, Cattle, Pigs etc)** | **Poultry (Chickens, Ducks, etc)** | **TV** | **Radio** | **Bicycle** | **Bed** | **Matress** | **Cell Phone** | **Hoe** | **Axe** | **Shovel** | **Brazier** |
| 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 2 | 0 | 2 | 1 |
| 2 | 6 | 1 | 0 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 4 | 4 | 1 | 4 | 3 | 1 | 2 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| 5 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 |
| 6 | 9 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 2 |
| 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 7 | 2 | 1 | 1 |
| 11 | 0 | 1 | 0 | 6 | 0 | 1 | 0 | 2 | 2 | 1 | 4 | 1 | 1 | 3 |
| 12 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 2 | 2 | 0 | 4 | 1 | 1 | 2 |
| 13 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14 | 3 | 0 | 0 | 7 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 1 | 1 |
| 15 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 2 | 1 | 5 | 2 | 2 | 2 |
| 16\* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 3 | 3 | 1 | 2 |
| 18 | 0 | 0 | 0 | 5 | 1 |  | 1 | 3 | 1 | 1 | 3 |  | 0 | 2 |
| 19 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |  | 1 | 1 | 0 | 0 | 0 | 2 |
| 20\* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 2 |
| 22 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 2 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PAP Identification Code** | **No. of Houses** | **Plot (Residential, commercial)** | **Livestock (Goats, Cattle, Pigs etc)** | **Poultry (Chickens, Ducks, etc)** | **TV** | **Radio** | **Bicycle** | **Bed** | **Matress** | **Cell Phone** | **Hoe** | **Axe** | **Shovel** | **Brazier** |
| 23 | 1 | 0 | 0 | 10 | 1 | 1 | 0 | 0 | 1 | 1 | 3 | 1 | 0 | 2 |
| 24 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 25\* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26\* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Source : Source : CEC PAPs database

**Notes :**

***\*****PAPs were not available at the time of data capturing*

* *Data for PAP 23 was collected later but has not been used in the analysis.*

### Duration of Cultivation on Project Land

Although some PAPs indicated that they had practiced seasonal agriculture on the Project land for over 20 years, there was still not enough evidence of their dependence on the agricultural activities practiced on the project land. This is so because of the meager yields and sizes of crop fields as reported in the crop valuation report compiled by the Ministry of Agriculture. The project Land measures about 56 hectares, while the total area comprising the individual crop fields belonging to the PAPs amounted to only 4.2 hectares. If the livelihoods of the PAPs were really dependent on the Project land, they could have extended the sizes of their crop fields especially those that claimed to have been cultivating on the project land for longer periods. We could therefore state that the PAPs only practiced their seasonal agricultural activities as a contribution to their sustenance and might have been only a way of gaining ownership of the respective pieces of land on the project site.

Table 3.5‑10: PAPs’ Duration of cultivation on Project Land

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **PAP**  **Identification**  **Code** | **Size of Field on Project Site**  **(ha)** | **Duration of Cultivation on**  **Project Land** | **Agricultural Activity outside project land**  **and mode of access** | **Mode of Access to Project Land** |
| 1 | 0.25 | 3 yrs | No | Rented |
| 2 | 0.22 | 3 yrs | Yes - rented | Rented |
| 3 | 0.25 | 8 yrs | No | Rented |
| 4 | 0.06 | 4 yrs | No | Commons access |
| 5 | 0.25 | 3 years | No | Rented |
| 6 | 0.32 | 4 yrs | Yes - rented | Rented |
| 7 | 0.26 | 8 yrs | No | Commons access |
| 8 | 0.29 | 20 yrs | No | Commons access |
| 9 | 0.045 | 16 yrs | No | Commons access |
| 10 | 0.18 | 8 yrs | No | Commons access |
| 11 | 0.55 | 22 yrs | No | Commons access |
| 12 | 0.26 | 22 yrs | No | Commons access |
| 13 | 0.24 | 22 yrs | Yes - rented | Commons access |
| 14 | 0.45 | 10 yrs | No | Commons access |
| 15 | 0.25 | 18 yrs | No | Commons access |
| 16 | 0.1 | 8 yrs | No | Commons access |
| 17 | 0.78 | 13 yrs | No | Commons access –  inherited from family |
| 18 | 0.18 | 30 yrs | Yes - owned | Commons access |
| 19 | 0.12 | 2 yrs | No | Commons access |
| 20 | 0.15 | 7 yrs | - | Commons access |
| 21 | 0.01 | 3 yrs | No | Commons access |
| 22 | 0.01 | 1 yr | No | Commons access |
| 23 | 0.11 | 3 yrs | No | Commons access |
| 24 | 0.02 | - | No | Commons access |
| 25\* | 0.07 | - | - | - |
| 26\* | 0.16 | - | - | Commons access |

*Source: Source: CEC PAPs database / \*PAPs 25 and 26 have not been available during the public meetings*

### Willingness to Adopt Alternative Livelihood Sources

The survey established that some PAPs were willing to adopt and stick to alternative livelihood sources other than agriculture and that they had only been undertaking seasonal agriculture due to lack of capital to enable them to venture into other livelihoods. For example, 37.5% of PAPs indicated that they would like to do business/petty trading but did not have financial capital for this. 12.5% of the PAPs indicated that they would like to pursue tertiary education and formal employment respectively. Only 37.5% had expressed that they would continue with agriculture.

The project land does not represent a source of natural resource products or ecosystem service for the identified PAPs or surrounding communities. Suffice to note that the burning of charcoal on the project land was only seen after the announcement of the cut-off date for the project. This was because people from surrounding communities believed that existing vegetation would be cleared to pave way for the project and hence were only helping the Proponent with site clearing. Although a good number of people in the surrounding high density residential areas depend on charcoal and firewood for cooking and heating, no one declared dependence on the forest resource on project land by cut-off date and hence no disturbance of this kind of livelihood source was expected as a result of project implementation.

# Criteria for Vulnerability Assessment

The foregoing background information helped the consultant and the Proponent to come up with the following criteria for a PAP to be regarded as vulnerable.

Table 3.5‑1: Vulnerability Criteria

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Vulnerability Criteria** | **Vulnerability status** | **Number of PAPs** | |
| **Male** | **Female** |
| 1 | If the PAP is aged ³ 65 years, i.e.  retirement age for Zambia | merely vulnerable | 1 | 2 |
| 2 | If the PAP is disabled or  handicapped | somewhat vulnerable | 1 | 0 |
| 3 | If the PAP is female and widowed | somewhat vulnerable | 0 | 3 |
| 4 | If the PAPs’ annual income from other sources is less than ZMW4,000 and the ratio of income from agricultural activities to income from other sources is less than 20% [i.e.  Val. Agri. Prod / Income from other  sources. X 100] | somewhat vulnerable | 0 | 1 |
| 5 | If the PAPs’ income from other sources is less than ZMW4,000 and the ratio of income from agricultural activities to income from other sources is greater than 20% [i.e. Val. Agri. Prod / Income from other  sources. X 100] | very vulnerable | 3 |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6 | If the PAP is aged below 18 years  and heading a household | very vulnerable | 0 | 0 |
| 7 | If the PAP does not have an alternative income source other than that from agricultural activities from  project land | very vulnerable | 1 | 0 |
| 8 | If the PAP is has prolonged health  challenges | extremely vulnerable | 2 | 0 |

Based on the above set criteria, the vulnerability assessment identified Eleven (11) PAPs as vulnerable. These are highlighted in the table below;

Table 3.5‑2: Vulnerable PAPs on Project Land

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Vulnerability Criteria** | | | | | | | | **Vulnerability Status** |
| **PAP**  **Identification Code** | **Aged 65 years, (retirement age for Zambia)** | **Disabled or handicapped** | **Female and widowed** | **Other Income less than ZMW4,000 and**  **the ratio of income from agriculture to income from other sources is more than 20%** | **Other income less than ZMW4,000 and**  **the ratio of income from agriculture to income from other sources is less than 20%** | **Below 18 years of age and heading a household** | **No alternative income other than income from agricultural activities from project land** | **Health challenges** | 1. **Merely vulnerable** 2. **Somewhat vulnerable** 3. **Very vulnerable** 4. **Extremely vulnerable** |
| 18 | X |  | X |  |  |  |  |  | Somewhat vulnerable |
| 10 |  |  |  |  |  |  |  | X | Extremely vulnerable |
| 9 |  |  | X |  |  |  |  |  | Somewhat vulnerable |
| 20 | X |  | X |  |  |  |  |  | Somewhat vulnerable |
| 5 | X |  |  |  |  |  |  |  | Merely vulnerable |
| 4 |  |  | X |  | X |  |  | X | Extremely Vulnerable |
| 19 |  |  |  | X |  |  |  |  | Very vulnerable |
| 8 |  |  |  | X |  |  |  |  | Very vulnerable |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 17 |  |  |  | X |  |  |  |  | Very vulnerable |
| 14 |  | X |  |  |  |  |  |  | Somewhat vulnerable |
| 7 |  |  | X |  |  |  |  |  | Extremely Vulnerable |

*Source: CEC Database*

***Notes:***

* *The severity of vulnerability ranged from merely to extremely vulnerable, with merely vulnerable having low significance and extremely vulnerable having high significance. Therefore, if a PAP matches more than one vulnerability criteria, the criterion with the highest significance was considered*

More information about the PAPs is provided in the table below (Table 15):

Table 3.5‑3: Summary of Other Information about PAPs

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PAP**  **Identification Code** | **Physical/Health Status (Normal, health challenges, Disabled)** | **Amount for Rentals/Yr (ZMW)** | **House ownership** | **Source of Income for Rented Accomod. (Remittances, Salary, wages, etc)** | **Period of residence at rented Accomod. (Yrs)** | **Period of residence at own house (Years)** | **Mode of acquisition of current accommodation (Purchased, built, gift, inheritance,**  **other)** | **Employment Status (Working Formally, Retired, Running a Business)** | **Number of Household members employed (Formally, running a business)** |
| 1 | Normal | 4,200 | No | Trading | 3months | N/A | N/A | Buying Agric produce on Copperbelt farms for  sale | 1 |
| 2 | Normal | 0 | Yes | N/A | N/A | 7 | Built | Running a Business | 1 |
| 3 | Normal | 0 | No | N/A | N/A | N/A | Caretaker | Informal employment | 1 |
| 4 | Health  challenges | 0 | Yes | N/A | N/A | 15 | Inherited | Not working due to age | 0 |
| 5 | Normal | 0 | Yes | N/A | N/A | 4 | Purchased | Working as a Security  Guard | 1 |
| 6 | Normal | 0 | Yes | N/A | N/A | 30 | Built | Not working due to  advanced age | 0 |
| 7 | Normal | 1,200 | No | Business | 5 | N/A | N/A | Running a business | 1 |
| 8 | Normal | 0 | Yes | N/A | N/A | 10 | Built | Not working due to  advanced age | 0 |
| 9 | Normal | 840 | No | Business,  Remittance | 2 Years | N/A | N/A | Running own Business | 1 |
| 10 | Health  challenges | 0 | Yes | N/A | N/A | 30 | Built | Running a Business | 1 |
| 11 | Normal | 4,800 | No | Business | 3 | N/A | N/A | Trades in Agric Produce | 1 |
| 12 | Normal | 2,400 | No | Wages | 2 | N/A | N/A | Running a Business | 2 |
| 13 | Normal | 2,640 | No | Farming | 4 | N/A | N/A | Sale of Farm produce from two farms outside  project area | 2 |
| 14 | Disabled | 0 | Yes | N/A | N/A | 41 | Purchased | Retired | 0 |
| 15 | Normal | 0 | Yes | N/A | N/A | 30 | Built | Retired | 0 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 16 |  |  |  |  |  |  |  |  |  |
| 17 | Normal | 0 | Yes | N/A | N/A | 12 | Purchased | Running a business | 1 |
| 18 | Normal | 0 | Yes | N/A | N/A | 36 | Purchased | Running a business-  Gardening | 1 |
| 19 | Normal | 1,200 | No |  |  |  |  |  |  |
| 20 |  |  |  |  |  |  |  |  |  |
| 21 | Normal | 0 | Yes | N/A (Lives in company  House) | 36 | N/A | Lives in company  House | Working formally | 1 |
| 22 | Normal | 3,000 | No | Husband  Salary | 1 | N/A | N/A | Not working | 1 |
| 23 | Normal | 0 | Yes | N/A | N/A | 4 | Built | Informal employment | 1 |
| 24 | Normal | 960 | No | Trading |  |  |  | Selling Vegetables and  Floor polish | 1 |
| 25 |  |  |  |  |  |  |  |  |  |
| 26 |  |  |  |  |  |  |  |  |  |

S*ource: Source: CEC PAPs database*

*\*PAPs 16, 20, 25 and 26 were not available at the time of data capturing*

# Inventory of Economic Losses

## Loss of Land or Agricultural Fields

In accordance with the land legislation in Zambia, to be eligible for compensation for loss of land, affected people need to have legal title or proof of a legal transaction in obtaining the land. For the Garneton North Solar PV Site, none of the PAPs had any form of legal proof of ownership of any part of the project land. However, the IFC/World Bank Standards guide that all PAPs must be compensated to levels equal to or better than the period prior to project commencement regardless of whether they have legal ownership or not. However, the PAPs were cognisant of the fact that they had encroached on private land and hence would only be compensated for the assumed losses. A clear message was given that all persons who might have encroached on the project land after the cut- off date would not be entitled to any compensation. No land valuation was done because no part of the project land was expropriated from legal owners.

## Loss of Crops

Seasonal agriculture was one of the economic activities for the PAPs who were found on the project land. These PAPs grew seasonal crops including maize, sweet potatoes, groundnuts, etc. In order for compensation values for crops to be computed, experts from the Ministry of Agriculture were engaged to conduct crop assessment and valuation. As determined by the Ministry of Agriculture, Kitwe district, the values adopted for compensation for different types of crops reflected prevailing market prices.

## Loss of Fruit trees

The compensation values for fruit trees were determined based on a 10-year period. This was deliberately picked to bridge the income gap between the yield of an existing tree to be cut today, and the time it takes for a newly planted tree to reach a similar yield (i.e. approximately 8 to 10 years). The compensation amounts also included the cost of replanting a new tree elsewhere by the PAP. The table below summarizes the inventory of crop and fruit tree losses.

## Loss of Access to Natural Resources

The project area has miombo tree species under secondary regeneration and open canopy. Members of the community who used to do agricultural activities would access some firewood and some would cut some trees to make charcoal. Because charcoal burning was an illegal activity, the practice was sporadic hence it was not a continuous income generating activity in the project area. An interview with the local community leader revealed that people could not freely cut trees for charcoal burning because they knew the land belonged to CEC. Therefore, a significant resource which the PAPs will lose access to on the project site is only to access to land agricultural activities. Loss of access to land is significant because the PAPs livelihood was heavily dependent on land through their various subsistence crop farming activities.

The proposed monetary compensation measures for fruit trees and land and giving the PAPs alternative land to continue with their livelihood activities will help cushion this impact. Further, the project will priorities providing jobs to local people unless the skills needed are not present in the area. Local contractors for periodic plant clean up and landscaping will also be encouraged to employ local people. These measures will again help cushion the livelihood impact that the project brings.

## Entitlement Framework

GaN was cognizant of the fact that the Garneton North Solar Project might impact on the food security and income earning capacity of the PAPs, and hence paid full attention to all issues surrounding the displacements. The Developer conducted several consultative meetings with relevant government institutions which enabled them to come up with the best livelihood restoration strategies. All livelihood restoration strategies have been executed in collaboration with public institutions and community representatives and within the framework of the relevant national law and international Standard. Table 16 below presents the entitlement framework for the PAPs on the Garneton North Project.

Table 6.5‑1: Entitlement Framework

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of loss/benefit** | **Applies to** | **Definition of**  **application** | **Description of Entitlement** |
| Loss of Land and agriculture fields | Parts of the project land that was used for illegal cultivation. | Applies to the 26 PAPs that were found to be cultivating on the Garneton North Project land | * Compensation in cash for assumed loss of crops for all PAPs. * Cash for renting of cultivation land for three seasons for deserving PAPs as per vulnerability criteria, * Relocation allowance for all displaced PAPs * Alternative cultivation land for the vulnerable PAPs * Agriculture input support and training for all PAPs |
| Loss of Fruit Trees | Parts of the project land that was cultivated by PAPs and had fruit trees | Applies to the 7 PAPs that were cultivating on the project land and mango or guava trees were found on their  fields | * Cash compensation based on ten-year period |
| Loss of foot paths | Parts of the project land that was used for short cut routes to surround farms by people from the surrounding  Compounds | The surrounding Project Community | * Agreement of suitable common foot paths with the community |
| Loss of livelihood from charcoal burning | Parts of the project land that was used for illegal cultivation | This practice was sporadic as charcoal burning is an illegal activity, and the community knew the land belonged to CEC | No entitlements. No PAPs recorded charcoal burning as a source of livelihood |

Table 6.5‑2: Inventory of Losses as computed by Ministry of Agriculture

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PAP**  **Identification Code** | **NRC** | **PHONE**  **No.** | **CROP** | **SIZE OF FIELD**  **(ha)** | **YIELD**  **(ton/ha)** | **EXPECTED PRODUCTIO N**  **(No. X 50kg)** | **COST OF CROP**  **(ZMW)** | **PERIOD OF COST**  **(yr)** | **VALUE OF CROP**  **(ZMW)** |
| 1 | 486315  /67/1 | 0968877004 | EGGPLANT | 0.02 | 4.0 | 1 | 150 | 1 | 150 |
| CASSAVA | 0.01 | 1.92 |  |  |  | **\*\*\*** |
| PUMPKIN  LEAVES | 0.01 | 3.0 | 0.5 | 50 | 1 | 25 |
| MAIZE | 0.20 | 2.44 | 6 | 110 | 1 | 660 |
| OKRA | 0.01 | 4.0 | 0.5 | 150 | 1 | 150 |
| 2 | 395814  /67/1 | 0972889650 | MAIZE | 0.22 | 2.44 | 6.5 | 110 | 1 | 715 |
| 3 | 184427  /44/1 | 0962490735 | MANGO TREE(S)  (1) | 1 | 300kg  /tree | 1 | 300 | 1 | 300 |
| 4 | 128404  /23/1 | 0965834909 | CASSAVA | 0.06 | 1.92 | 2 | 120 | 1 | 240 |
| 5 | 160875  /43/1 | 0964440609 | MAIZE | 0.24 | 2.44 | 7 | 110 | 1 | 770 |
| G/NUT | 0.01 | 0.62 | 0.5 | 70 | 1 | 35 |
| MANGO TREES (1) | 1 | 300kg  /tree | 1 | 300 | 1 | 300 |
| 6 | 304183  /52/1 | 0977361261 | MAIZE | 0.32 | 2.44 | 9.5 | 110 | 1 | 1045 |
| MANGO TREES  (4) | 1 | 300kg  /tree | 4 | 300 | 1 | 1200 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PAP**  **Identification Code** | **NRC** | **PHONE**  **No.** | **CROP** | **SIZE OF FIELD**  **(ha)** | **YIELD**  **(ton/ha)** | **EXPECTED PRODUCTIO N**  **(No. X 50kg)** | **COST OF CROP**  **(ZMW)** | **PERIOD OF COST**  **(yr)** | **VALUE OF CROP**  **(ZMW)** |
|  |  |  | GUAVA TREE  (1) | 1 | 400kg/ Tree | 1 | 480 | 1 | 480 |
| 7 | 248801  /64/1 | 0969730062 | MAIZE | 0.16 | 2.44 | 5 | 110 | 1 | 550 |
| G/NUT | 0.10 | 0.62 | 2 | 70 | 1 | 140 |
| 8 | 259310  /67/1 | 0965121978 | MAIZE | 0.18 | 2.44 | 5.5 | 110 | 1 | 605 |
| SWEET  POTATO | 0.01 | 3.16 | 1 | 90 | 1 | 90 |
| G/NUT | 0.1 | 0.62 | 2 | 70 | 1 | 140 |
| MANGO TREES  (8) | 1 | 300kg  /tree | 8 | 300 | 1 | 2,400 |
| 9 | 242108  /67/1 | 0968087418 | MAIZE | 0.015 | 2.44 | 1 | 110 | 1 | 110 |
| G/NUT | 0.03 | 0.62 | 0.5 | 70 | 1 | 35 |
| 10 |  | 0961945006 | MAIZE | 0.18 | 2.44 | 5.5 | 110 | 1 | 605 |
| 11 | 103488  /34/1 | 0950724246 | MAIZE | 0.35 | 2.44 | 10 | 110 | 1 | 1,100 |
| G/NUY | 0.18 | 0.62 | 2 | 70 | 1 | 140 |
| MBAMBARA  NUT | 0.01 | 0.26 | 0.5 | 70 | 1 | 35 |
| BEANS | 0.01 | 0.71 | 0.5 | 100 | 1 | 50 |
| 12 | 361386  /65/1 |  | MAIZE | 0.21 | 2.44 | 6 | 110 | 1 | 660 |
| G/NUT | 0.02 | 0.62 | 0.5 | 70 | 1 | 35 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PAP**  **Identification Code** | **NRC** | **PHONE**  **No.** | **CROP** | **SIZE OF FIELD**  **(ha)** | **YIELD**  **(ton/ha)** | **EXPECTED PRODUCTIO N**  **(No. X 50kg)** | **COST OF CROP**  **(ZMW)** | **PERIOD OF COST**  **(yr)** | **VALUE OF CROP**  **(ZMW)** |
|  |  |  |  |  |  |  |  |  |  |
| BEANS | 0.03 | 0.71 | 0.5 | 100 | 1 | 50 |
| 13 | 194748  /65/1 | 0964205430 | MAIZE | 0.16 | 2.44 | 5 | 110 | 1 | 550 |
| SWEET  POTATO | 0.08 | 3.16 | 5 | 90 | 1 | 450 |
| 14 | 130122  /45/1 |  | MAIZE | 0.25 | 2.44 | 7 | 110 | 1 | 770 |
| G/NUT | 0.2 | 0.62 | 3 | 70 | 1 | 210 |
| 24 |  | 0966650935 | MAIZE | 0.01 | 2.44 | 1 | 110 | 1 | 110 |
| G/NUT | 0.01 | 0.62 | 0.5 | 70 | 1 | 35 |
| 15 | 130785  /25/1 | 0962759433 | MAIZE | 0.25 | 2.44 | 7 | 110 | 1 | 770 |
| MANGO TREES  (3) | 1 | 300kg  /tree | 3 | 300 | 1 | 900 |
| 16 |  |  | MAIZE | 0.1 | 2.44 | 3 | 110 | 1 | 330 |
| 17 | 375073  /67/1 | 0964123901 | MAIZE | 0.55 | 2.44 | 16 | 110 | 1 | 1,760 |
| SWEET  POTATO | 0.2 | 3.16 | 12 | 90 | 1 | 1,080 |
| MBAMBARA  NUT | 0.03 | 0.26 | 0,5 | 70 | 1 | 35 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PAP**  **Identification Code** | **NRC** | **PHONE**  **No.** | **CROP** | **SIZE OF FIELD**  **(ha)** | **YIELD**  **(ton/ha)** | **EXPECTED PRODUCTIO N**  **(No. X 50kg)** | **COST OF CROP**  **(ZMW)** | **PERIOD OF COST**  **(yr)** | **VALUE OF CROP**  **(ZMW)** |
|  |  |  | MANGO TREES  (5) | 1 | 300kg  /tree | 5 | 300 | 1 | 1,500 |
| 18 |  | 0962472134 | MAIZE | 0.18 | 2.44 | 5.5 | 110 | 1 | 605 |
| MANGO TREES  (8) | 1 | 300kg  /tree | 8 | 300 | 1 | 2,400 |
| 19 | 395814  /67/1 | 0962472134 | MAIZE | 0.12 | 2.44 | 3.5 | 110 | 1 | 385 |
| 20 | 129895  /67/1 | 0962472134 | MAIZE | 0.15 | 2.44 | 4 | 110 | 1 | 440 |
| 21 | 568515  /67/1 | 0964875888 | G/NUT | 0.01 | 0.62 | 0.5 | 70 | 1 | 35 |
| 22 | 472888  /67/1 | 0960153440 | G/NUT | 0.01 | 0.62 | 0.5 | 70 | 1 | 35 |
| 23 | 181407  /35/1 | 0964462727 | MAIZE | 0.05 | 2.44 | 2 | 110 | 1 | 220 |
| G/NUT | 0.06 | 0.62 | 0,5 | 70 | 1 | 35 |
| 25 |  |  | MAIZE | 0.16 | 2.44 | 5 | 110 | 1 | 550 |
| 26 |  | 0966534265 | MAIZE | 0.07 | 2.44 | 2.5 | 110 | 1 | 275 |

*Source: April 2019 Agric Report*

***NOTE:*** *The Cassava plant is about 5 months old. Harvesting of the crop determined to take about 17 months from April 2019. However, GaN compensated the PAP according to the market value of cassava.*

# Impacts of displacement

## Impact Zone of Influence

The direct area of influence for the solar plant is the 56 hectares piece of land already acquired for the project and land within the 500m radius from the perimeter of the project site and the main access road adjacent to the project site. PAPs doing agricultural activities within the 56 hectares piece of land will lose access to their fields. The impacts of dust, noise and increased traffic in the project area are expected to be felt within a 500m radius from the project site. However, the proposed mitigation measures will reduce the severity and magnitude of these impacts. The already existing CEC solar farm is also expected to be affected by the dust from the site clearing activities.

Only PAPs doing activities within the 56hectares will have their livelihood affected negatively. However, the project will also have a positive impact on both the PAPs and other members of the community who will access the job opportunities which will be available during the construction phase. The income from the jobs will help them improve their agricultural activities by having money to buy the needed farming inputs. The proposed solar farm is not expected to result in any physical relocation of households and any loss of land by any PAP since the land marked for the development of the Solar plant belongs to CEC. The figure below shows key infrastructure around the proposed project site.

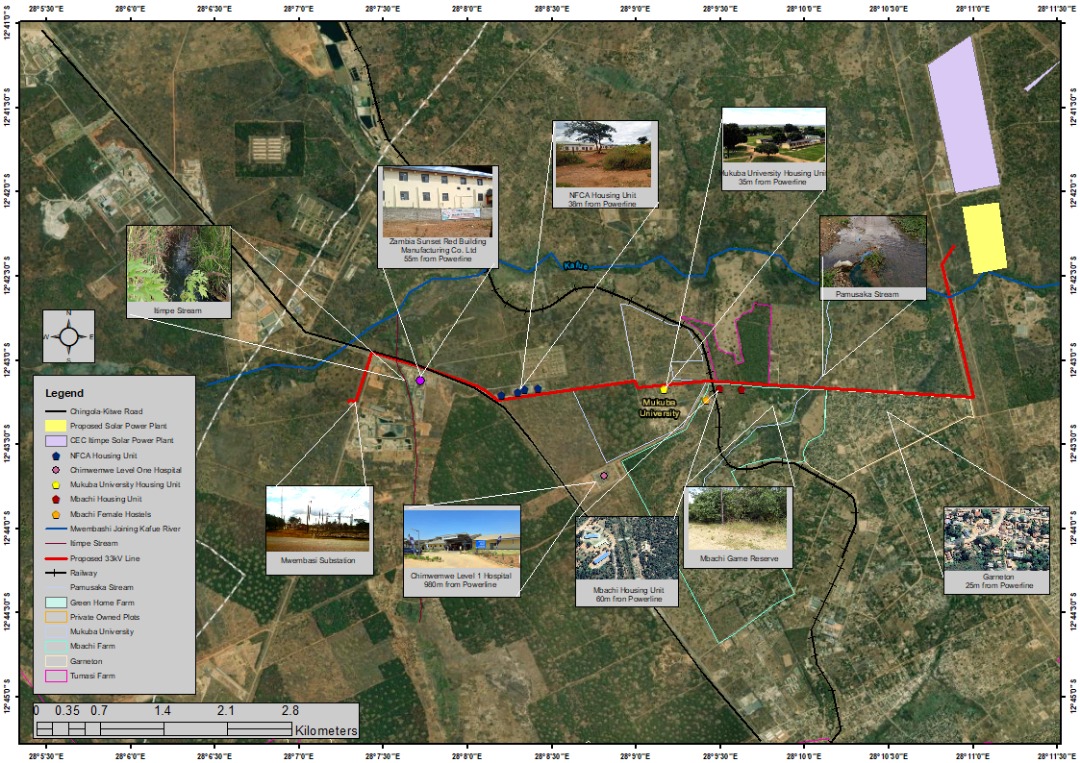


Figure 7.1‑1: Infrastructure Around the Proposed Project Site

## Positive impacts

Consultation with community representatives and civic leaders showed that the most evident positive impact of the Project is employment. Employment by the Project is expected to boost the local economy and improve the livelihoods of those who will be employed to work on the project. The local authority (Kitwe City Council) recognizes that the project will help the region and the nation to diversify electricity sources. Moreover, if compensation for displacements of agricultural fields is accomplished in a fair and equitable manner, the PAPs believed that this will be able to mitigate their loss of livelihoods.

## Potential Adverse Impacts

PAPs expressed that loss of access to agricultural land would directly impact agricultural production and reduce household income and livelihoods. Cutting off fruits trees was also viewed as a significant adverse impact of the Project since fruit trees require a longer period to grow. In addition, loss of access routes (footpaths and dirty tracks) was also aired as a significant adverse impact by the affected persons.

## Displacement-Related Potential Impacts of the Project

The Garneton North Solar PV Project will not involve land acquisition, as the land comprising the Project land is owned by Copperbelt Energy Corporation (CEC) who have title for the land. Despite the land being owned by CEC, the project land was in the past encroached on by residents of surrounding high-density residential areas who temporarily utilized some parcels of land for seasonal agricultural activities. These PAPs have since been displaced after receiving full compensations for their losses. Therefore, the project has resulted in economic displacements in the form of displacement of agricultural fields. The project land is also traversed by footpaths and dirty tracks which provides access to private properties across the eastern border of the Project site.

In general, the social risks associated with the Project include:

* Loss of land.
* Loss of standing crop.
* Impoverishment, food security and loss of income; and
* Loss of community resources and access routes.

The proponent honoured the following commitment to avoid and/or significantly reduce effects of the above risks:

* Loss of land was avoided in the sense that the project land was already owned by CEC and hence the project was not acquiring privately or publicly owned land, but rather the

displacement of encroachers who understood the project land belonged to CEC and have since been fully compensated.

* The proponent acquired alternative land in the nearby vicinity which has be allocated to the vulnerable groups among the PAPs for their continued farm-based livelihood which eliminates the possibility of impoverishment and food insecurity due to the project.
* Loss of income is avoided; rather the Project will create employment opportunities over its construction period and future seasonal and permanent employment opportunities for the PAPs. The kind of jobs will mainly be semi-skilled and non-skilled seasonal jobs. PAPs will be given priority of employment.
* The loss of community resources (forests and pasture lands) was assessed and is clearly a non- issue as none of the PAPs or community members gave indications of reliance on project land.

Loss of standing crops and displacement of agricultural fields was assessed, with crop valuation done by experts from the Ministry of Agriculture (please refer to table 17). The PAPs who had agricultural fields on the project site were compensated for the assumed loss of crops for a specified period and the value of existing fruit trees. All access routes that traverse the site and respective users were identified. Agreements have been finalized on which routes to be retained and ones to be displaced and rerouted, the cost of which will be borne by the Proponent. The table below summarizes the various mitigation measures to be implemented for all identified losses.

Table 7.3‑1: Potential losses and proposed mitigation measures

|  |  |  |
| --- | --- | --- |
|  | **Expected Loss** | **Proposed Mitigation** |
| 1 | Loss of agricultural land | PAPs were given three times the value of the standing crop which they had on project land. A displacement or resettlement allowance was also paid to all PAPs.  and Aan additional lumpsum amount was paid to the PAPs to enable them rent equivalent alternative parcels of land for 3 seasons.  Alternative Land was secured by the Developer and assigned to the vulnerable PAPs where they have continued with seasonal agricultural activities.  . |
| 2 | Displacement of access routes | Common and combined access routes have been agreed  upon with PAPs, while some routes will be retained |
| 3 | Loss of access to forest resource | No mitigation as none of the PAPs or members of nearby communities confirmed dependence on project land for  forest products |
| 4 | Loss of standing crop | PAPs were allowed to harvest their crops after maturity |
| 5 | Loss of fruit trees | All fruit trees were compensated at the full value as valuated  by experts from the Ministry of Agriculture |

## Magnitude of project’s impacts on PAPs

The land comprising the project site is on title, owned by CEC, hence the project’s preparation process did not involve acquisition of land. However, there were a total of twenty (26) local people who had encroached on the project land for seasonal agricultural activities. The average size of agricultural fields found on the project land was 0.21 hectares. The PAPs have since been displaced after receiving their full compensations.

## Project Impacts According to Socio-Economic Survey

### Economic Displacement According to Socio-Economic Survey and Crop Valuation

To assess the Project impacts specific to loss of income as a result of displacement of agricultural fields, the survey posed questions to understand the types of crops that were grown by individual PAPs and income which they generated from the respective agricultural fields. The PAPs only grew rain-fed crops which in most cases was for home consumption. None of the PAPs reported having been selling for cash, the fruits harvested from mango and guava trees that were found within their crop fields. Therefore, the PAPs were only impacted from loss of agricultural income and household food. Nevertheless, the proponent still compensated the PAPs for loss of fruit trees as assessed by the Department of agriculture.

The PAPs were compensated for the displaced agricultural fields by way of paying for the assumed loss of crops based on the prevailing market value. In addition, a lumpsum relocation allowance and cash payment for renting alternative land for 3 seasons was paid to the deserving PAPs as per entitlement matrix. Alternative land was sourced for the vulnerable to continue with their agricultural activities. The vulnerable PAPs have been assigned pieces of land equivalent in size to the land which they utilized on the project land. This land is strictly for use by the registered PAPs and will remain under CEC ownership. Access to this land is renewed every season and not transferrable to the offsprings or other relatives of the PAPs. Furthermore, the proponent gave out agricultural inputs (fertilizers and seeds) to the PAPs, and facilitated trainings in ‘agriculture as a business’, enterprise which was aimed to benefit the PAPs.

Results of the crop assessment and valuation showed very low-income generation from agricultural activities practiced on project land. To understand the dependence of PAPs on agricultural activities, the socio-economic survey inquired about the alternative income sources of the PAPs and how much they earned annually from these alternative income sources. The results showed that PAPs have additional income from alternative sources. The on-going monitoring of the vulnerable PAPs who were assigned alternative land for continuation of seasonal farming has also proved that the PAPs did not consistently grow the crops on the project land as only a few have shown to be consistent.

### Impact on Natural Resources and Ecosystem Services According to Socio-Economic Survey

The project land and the power line corridor do not represent a source of natural resource products for the identified PAPs or surrounding communities. Suffice to note that the burning of charcoal on the project land was only seen after the announcement of the cut-off date for the project. This is because, people from surrounding communities believed that existing vegetation will be cleared to pave way for the project and hence only helping the Proponent with site clearing.

## Mitigation / Compensation Measures

Although the project will not involve land acquisition as it comprises a privately owned and titled land vested in CEC, project implementation still resulted in displacement of seasonal agricultural fields belonging to people from surrounding local communities who had illegally encroached on the project land.

All PAPs who were identified at the time of declaration of the cut-off date were allowed to harvest their crops to minimize the impact. In addition, the PAPs have been compensated for the assumed loss of crops based on the values calculated from the crop valuation assessment done by the Ministry of Agriculture. Additional compensation included a relocation allowance and cash for renting alternative agricultural land for three seasons applicable to the non-vulnerable PAPs. The vulnerable groups have been allocated alternative land to carry on with their agricultural practices.

Additional benefits for the different vulnerability categories of PAPs were given following the criteria summarized in the table below:

Table 7.6‑1: Assistance to PAPs

|  |  |
| --- | --- |
| **Category** | **Assistance** |
| Merely vulnerable | * Employment for those able to work * Agriculture inputs for 1 year * Training in improved agriculture practices for improved yields and agriculture as a commercial activity * Entrepreneurship training and training in marketing and financial management * A lumpsum relocation allowance of ZMW 1500. * Compensations for assumed loss of crops for three seasons, cash compensation for fruit trees or any other assets * Cash payment for renting equivalent sizes of pieces of land in nearby private properties for continuation of agricultural activities for 3 seasons. |
| Somewhat vulnerable | * Employment for those able to work * Agriculture inputs for 2 years * Training in improved agriculture practices for improved yields and agriculture as a commercial activity * Entrepreneurship training and training in marketing and financial management * A lumpsum relocation allowance of ZMW 1500. * Compensations for assumed loss of crops for three seasons, cash compensation for fruit trees or any other assets * Assigned alternative land for continuation of seasonal   agricultural activities. The size of this land is equivalent |

|  |  |
| --- | --- |
|  | to the size of land which the respective PAP was utilizing on the project land. |
| Very vulnerable | * Employment for those able to work * Agriculture inputs for 4 years * Training in improved agriculture practices for improved yields and agriculture as a commercial activity * Entrepreneurship training and training in marketing and financial management * A lumpsum relocation allowance of ZMW1,500. * Compensations for assumed loss of crops for three seasons, cash compensation for fruit trees or any other assets   Assigned alternative land for continuation of seasonal agricultural activities. The size of this land is equivalent to the size of land which the respective PAP was utilizing on the project land. |
| Extremely Vulnerable | * . Employment for those able to work * Agriculture inputs for 5 years * Training in improved agriculture practices for improved yields and agriculture as a commercial activity * Entrepreneurship training and training in marketing and financial management * A lumpsum relocation allowance of ZMW1,500. * Compensations for assumed loss of crops for three seasons, cash compensation for fruit trees or any other assets * Assigned alternative land for continuation of seasonal agricultural activities. The size of this land is equivalent to the size of land which the respective PAP was utilizing on the project land. |
| Other PAPs (Non-Vulnerable PAPs) | * Employment for those able to work * Cash payment for renting equivalent sizes of pieces of land in nearby private properties for continuation of agricultural activities for 3 seasons * Cash payment for assumed loss of crops. * Lumpsum relocation allowance of ZMW1,500 * Agricultural Inputs for 1 season * Training in improved agricultural practice and Training in Agriculture as a business |

## Public Consultations with Affected Communities

To date, a systematic and well-balanced approach to displacements has been taken. The first step involved thorough walks throughout the Project site to establish the presence of features which may be liable to displacement prior to project development. This was followed by the identification of the owners in the case of agricultural fields and the users in the case of access routes. A census of the Project Affected Persons was also undertaken during the stage of identification of the owners of agricultural fields. After identifications of owners of agricultural fields, a team of surveyors moved onto the site to map the exact sizes of crop fields falling under the project site. Survey (mapping) of fields was repeated by the Ministry of Agriculture during crop valuation surveys.

All PAPs who were identified to be cultivating on the CEC project land were then brought together for a public consultation meeting. The PAPs were informed that the Developer (GaN) was proposing to put up a solar PV Park on land across Mwambashi stream, as such, a single / combined public consultation meeting was held for the two project affected groups (i.e. meeting attended by people from both Garneton North and Garneton South sites).

During public consultations, potential displacements were explained to the Project Affected Persons, and this enabled them to air their views (see minutes of consultation meetings in Appendix 2 of this LRP). Stakeholder engagement meetings were also held with persons (owners of private farms across the eastern boundary of the site) likely to be affected by the relocation of access routes. Deliberations from the meetings resulted in the following agreements.

### Access Roads/Footpaths to be retained.

* + - Main access route to Mr. Gondwe’s farm
    - The main access route to PIZ which would also serve for all other surrounding shortcuts.
    - The Footpath from Sand Sales Village through Sand Sales Plant to PIZ
    - The access from the wayleave road to Sand Sales Village
    - The main access to Mr. Wright’s farm

### Access Roads/Footpaths earmarked for displacement.

* + - The foot path to Mr. Maynard’s farm
    - All footpaths to Mr. Wright’s farm (other than the main access route)
    - All footpaths to PIZ (other than the main access route)
    - The Foot path from the main wayleave road to the Sandsales Plant.

Consultative meetings also resulted into appointment of a resettlement working group and representatives of sub-committees as highlighted in the tables below.

Table 7.7‑1: Members of the resettlement working group

|  |  |
| --- | --- |
| **Position** | **Name of Elected Person** |
| Chairperson | Nselani Chilufya |
| Vice Chairperson | Mary Ntaimo |
| Secretary | Sailas Lungu |
| Vice Secretary | Fales Mwape |
| Publicity Secretary | Chishala Paison |
| Vice Publicity Secretary | Vero Bwembya |
| Health Representative | Elina Nambeya |
| Crime prevention | Fredrick Tembo |
| Environmental | Rita Sakashimbi |
| Community | Waren Mumba |
| Agriculture Representative | Beauty Musonda |
| Dingashome Kabwe |

Table 7.7‑2: Members of the resettlement working group

|  |  |
| --- | --- |
| **Table 20b: Representatives of Sub- Committees** | |
| **Position** | **Name of Elected Person** |
| Youths | Warren Mumba |
| Disabled | Alexander Chama |
| Zambia Compound | Nselemani Chilufya |
| Ganerton | Rita Sakashimbi |
| East Ganerton | Digashome Kabwe |
| East Garneton | Beauty Musonda |
| Race Course | Veronica Bwembya |
| Kamatipa | Elina Nambaya |
| Sand Sales | Fredah Chanda |
| Sand Sales | Fredrick Tembo |
| Twatasha | Fales Mwape |

# Stakeholder Engagement

A rigorous stakeholder engagement process was undertaken throughout the EIA process, as per guidelines received in the pre-tender award notice letter received from GETFiT Zambia Secretariat and will continue throughout all project phases. A number of stakeholders were identified and engaged during the compilation of the Environmental Project Brief. Consultations involved one-on- one meetings as well as public scoping meetings with key stakeholders, interested and affected parties (please refer to minutes of the meetings and full list of consulted persons in Appendix 2). During stakeholder engagement, project background information was presented to consulted people to enable them to appreciate the nature of the project, from which they could now deduce the project perceived impacts. A survey was also conducted to understand the demographics and assess the vulnerability of all Project Affected Persons and to establish whether the seasonal agricultural activities represent a main livelihood source to those with crop fields on the Project site.

In line with IFC Performance Standard 5, the Developer and its appointed Environmental Consultant engaged the Project Affected Persons (i.e. locals who have encroached the Project site for seasonal agricultural activities and owners of private properties which form the northern boundary of the site and have their access routes traversing the site) both during public scoping meetings and one-on-one- meetings. Stakeholder engagement is expected to continue throughout the project lifetime (please refer to a full stakeholder engagement strategy in appendix 5).

|  |  |
| --- | --- |
|  |  |
| Public consultation meetings in progress | |

Figure 7.8‑1: Consultation Meeting in Progress

## Methodology for Identification of Stakeholders and Announcement of Cut-off Date

The method for identification of potential stakeholders mainly involved site visits to the project area and reconnaissance surveys by walking the entire project area including transmission line route to identify social features such as cultivated areas and access routes. Further identifications were made through internal meetings where assessment of government and private institutions that would be involved at each phase of the project was made. In addition, several meetings were held with community leaders of the affected communities and obtaining from them information on members of the community who were linked to the assets/properties that were on the project land. These methods gave us a good appraisal of the stakeholders involved with the project.

To announce the cut-off date, the first step was to send notices of the meeting to the community through community leaders, i.e. village chairperson and publicity secretary. The community leaders were informed about the planned meetings a week before and the venue and time were agreed with them. The leaders were then requested to inform the community and Project Affected Persons about the planned meeting. The next step was to confirm with the two community leaders two days prior to the date of the meeting whether announcement about the meeting had been made, to which they did confirm.

The meeting was then held on 6th February 2019. The meeting started with project information and finally the announcement of the Cut-off Date. The meaning of cut-off date was explained in the local language – as the last date for the company to take record / register all assets/properties/activities on the project land, all cultural or religious activities taking place on the project land or any traditional activities such as rituals, or any special items such as vudus (local term) or anything used in traditional healing or witchcraft. The people were informed to see any of the team members or their community leaders and if necessary, in confidence after the meeting. An example was given of the Kabompo Project experience where one member of the community declined to be relocated from his village because he had his umbilical code buried there and the company took that into consideration. The people were informed that they had up to 17:00 hrs of that day (6th February 2019). Most people declared within the meeting that there was nothing apart from the cultivation activities. None of the people declared anything for the rest of that day.

The project team was convinced that the people had understood the implication of cut-off date as was explained in the local language and an example was given. The people responded and said they had nothing to declare apart from the cultivation fields and none of them declared anything in confidence to the team members or the community leaders.

From that time on, the community was not allowed to commence any new activities on the project land. To this end, CEC has embarked on an on-going patrol program which is done twice a week to ensure no new developments begin on Project land.

## Other Stakeholders

Other key stakeholders who were engaged during consultations included government departments and the local authorities; among them Ministry of Agriculture, Kitwe City Council, Civic Leaders (Area Councilor) and ZEMA who were all engaged on a one-on-one basis and also invited during the public meetings.

## Eligibility Criteria and Entitlement

An entitlement framework was established (as shown in Table 16 under section 5.4 of this document) based on the field surveys and subsequent meetings with government officials and the affected people. The framework encompassed all those people who were identified and verified to have agricultural fields on the project land at the time when the project cut-off date was announced and verified during the socio-economic survey conducted by the Environmental Consultant. Although the land comprising the Project site is titled land, (and locals not legally entitled to compensation), the Developer will still adhere to the IFC principles and ensured not only the adherence to Zambian legislation, but also respected international guidelines regarding displacements.

## Factors for Determining compensation and Eligibility

Different factors were used to determine the eligibility on whether or not a person qualified for compensations. In this project, applicable aspects such as Land loss, Loss of crops, loss of business, loss of structures were employed for eligible PAPs to get compensation; the criteria are as below:

### Loss of Land

In accordance with the land legislation in Zambia, to be eligible for compensation for loss of land, affected people need to have legal title or proof of a legal transaction in obtaining the land. For this Livelihood Restoration process, none of the identified PAPs had any form of legal claim to the project land and hence were only compensated for assumed loss of standing crop. The Developer and the Consultant made it clear that any persons who would encroach on the project land after the cut-off date (opportunistic investment) would not be entitled to any compensation. Land was sourced by the Developer from a nearby commercial farm and assigned to the vulnerable PAPs for continuing seasonal farming activities. Entitlement to this is not transferrable to the offsprings or relatives of the PAPs in the event that the PAP passes on.

### Loss of Crops

In order for compensation values for crops to be computed, consideration was given to ensuring that affected people were compensated for loss of potential revenue from any agricultural activities. As determined by experts from the Ministry of Agriculture, Kitwe district, the values adopted for compensation for different types of crops reflected the prevailing market prices.

Table 8.4‑1: Compensation Criteria for Loss of Crops as Determined by Agric Office-Kitwe District

|  |  |
| --- | --- |
| **Type of crop** | **Compensation amount/50 kg bag/season (ZMW)** |
| i) Maize | 110 |
| ii) Cassava | 120 |
| iii) Okra | 150 |
| iv) Groundnuts | 70 |
| v) Beans | 100 |
| vi) Sweet potatoes | 90 |
| vii) Mbambara Nuts | 70 |
| viii) Pumpkin Leaves | 50 |
| ix) Egg plant | 150 |
| x) Sweet potatoes  Vines | 40 |

### Loss of Fruit trees

The values of fruit trees were determined based on a 10-year period. This was deliberately picked to bridge the income gap between the yield of an existing tree to be cut at that time, and the time it takes for a newly planted tree to reach a similar yield (i.e. approximately 8 to 10 years). The compensation amount also catered for the cost of a new tree to be replanted elsewhere by the PAPs. Each is estimated to generate income as indicated below:

Table 8.4‑2: Compensation Criteria for Loss of Fruits as Determined by MOA

|  |  |
| --- | --- |
| **Type of fruit tree** | **Compensation amount/50KG Bag/Season**  **(ZMW)** |
| Mango | 300 |
| Guava | 480 |

*Source: Agric Report*

### Loss of buildings and structures

No buildings were found on the project land; hence no criteria were developed for loss of buildings/physical structures. However, one of the PAPs had dug a shallow water well in his field. This water well was evaluated by Government Valuation department (see Appendix 6) and appropriate compensation value was determined.

### Loss of Access to a Natural Resource and Ecosystem Services from Project Land

The project land does not represent a source of natural resource products for the identified PAPs or surrounding communities. Suffice to note that the burning of charcoal on the project land was only seen after the announcement of the cut-off date for the project. This is because, people from surrounding communities believe that existing vegetation will be cleared to pave way for the project and hence only helping the Proponent with site clearing.

### Loss / Displacement of Access Routes

The project land hosts a number of footpaths and dirty tracks which provide access to private properties located across the northern boundary of the site. Stakeholder engagement meetings have been held with persons likely to be affected by the relocation of access routes. Deliberations from the meetings resulted in the following agreements.

## Footpaths to be retained.

* Main access route to Mr. Gondwe’s farm
* The main access route to PIZ which would also serve for all other surrounding shortcuts.
* The Footpath from Sand Sales Village through Sand Sales Plant to PIZ
* The access from the wayleave road to Sand Sales Village
* The main access to Mr. Wright’s farm

## Footpaths earmarked for displacement.

* The foot path to Mr. Maynard’s farm
* All foot paths to Mr. Wright’s farm (other than the main access route)
* All footpaths to PIZ (other than the main access route)
* The Foot path from the main wayleave road to the Sandsales Plant.

# Method of Compensation

## Analysis of Compensation Methods

The following methods of compensation were considered for the various identified losses likely to result from the project:

### Agricultural Fields

* + - * Complete cash compensation for loss of crops from agricultural fields falling on the project land for all PAPs and additional cash to find rented land elsewhere for three seasons and alternative land for agricultural fields for the PAPs classified as very and extremely vulnerable.
      * Complete cash compensation for loss of crops from agricultural fields for all PAPs regardless of whether they are vulnerable or not and additional cash for finding rented land elsewhere for three seasons.
      * Compensation in kind for agricultural fields for all PAPs regardless of whether they are vulnerable or not.

**Preferred Option**

Option 1, complete cash compensation for loss of crops from agricultural fields falling on the project land for all PAPs and additional cash to find rented land elsewhere for three seasons and alternative land for agricultural fields for the PAPs classified as very and extremely vulnerable.

**Reason:**- PAPs were consulted on whether to source alternative land for them in an area located 50 km southwest of the Project site or to be compensated through complete cash compensation. Agricultural land in the vicinity of the project land is already owned on title by other private owners who only sell at competitive prices and hence would be too expensive for the Developer to acquire alternative land in close vicinity for all PAPs. The PAPs were not in favour of being offered land in an area too far from the project land and hence were agreeable to complete cash compensation. The developer managed to acquire a 10-ha piece of land close to the project site from a private owner where all vulnerable PAPs have been given appropriate pieces of land to continue with their seasonal farming activities.

### Fruit Trees in Agricultural Fields

1. Cash compensation at full productive stage of mature trees based on tree values computed by the Ministry of Agriculture.
2. Two replacement saplings for immature (unproductive) trees.
3. PAPs only allowed to harvest current fruits at the time of displacement without compensation.

Preferred Option

Option 1, cash compensation for the full productive life of mature trees based on tree values computed by the Ministry of Agriculture.

### Footpaths and Dirty Tracks Traversing Project Land

1. Affected footpaths and dirty tracks to be displaced and new combined and agreed footpaths to be constructed, the cost of which to be borne by the proponent.
2. Retain all footpaths and dirty tracks that traverse the Project land.

**Preferred Option**

Option 1 affected footpaths and dirty tracks to be displaced and new combined and agreed footpaths to be constructed, the cost of which to be borne by the proponent.

## Reason

Consultations were done with the affected communities and organizations regarding the intention to have combined access routes across the Project land and on which footpaths to retain. This has been fully concluded and the parties agreed for combined access routes to be done by the Proponent.

In line with the requirements of IFC PS5, priority for compensating PAPs especially the vulnerable, was given to a ‘payment in kind’ option. In this regard the Developer purchased land from a private owner in the vicinity of the project site. All vulnerable PAPs have been allocated land equivalent in size to the one that they actively utilized on the project land and have since continued with the seasonal farming. While ownership of this land is under the Developer, the PAPs have been allowed to use it for as long as they are able to. However, access to this land is restricted to the identified vulnerable PAPs and not transferable to their children or relatives.

# Livelihoods Restoration Programs

As already noted, the major assets that were displaced from the project site included agricultural fields. There were no settlements or other social infrastructures found and displaced from the project site. Displacement of agricultural fields has already been done after fully compensating the PAPs. In line with the Developer’s commitments to good corporate practices and IFC PS5 guidelines, the Project Affected Persons will also be further empowered through employment opportunities. The project is envisaged to require a labour force of between 150 – 200 persons. Therefore, all those Project Affected Persons will benefit from these employment opportunities for as long as they are able to work. For the aged ones, one or two children will be given jobs on the project, and this is expected to trickle down to them.

In summary, livelihood restoration programs will include the following.

* + - Cash compensation for assumed loss of crops.
    - Assistance in cash for rent of alternative land for PAPs other than the vulnerable.
    - Alternative land within the site’s vicinity allocated to the vulnerable PAPs for continuation of season farming.
    - Agriculture input for a specified period of time
    - Training in improved agriculture methods and agriculture as a business.
    - Further training in entrepreneurship, marketing and financial management.
    - Lump sum payment of resettlement / relocation allowance.
    - Community development programs will be embarked on during project implementation after identification of suitable programs.

CEC and surrounding private property owners will negotiate for combined access of tracks leading to their private property. The benefits for the affected people will be a well-maintained road.

## Assistance to Vulnerable Groups

In the context of this LRP, the vulnerable groups were identified as disabled or handicapped, the widowed and the aged (above the Zambian retirement age, i.e. 65 years), as well as those without alternative income aside from agricultural activities which they practice on project land. The vulnerability assessment undertaken for the PAPs identified Eleven (11) persons as vulnerable distributed as follows with reference to Table 14 of this document:

* + - Merely vulnerable 1 Person
    - Somewhat Vulnerable 4 Persons
    - Very Vulnerable 3 Persons
    - Extremely Vulnerable 3 Persons

## Organization Procedure for Delivery of Entitlements

The Developer had the overall responsibility for mobilising resources, coordination and financing and subsequently, the implementation of the LRP. A Community Liaison Officer (or Manager) or other individual from the Developer should be appointed to handle all issues related to the LRP and delivery of the entitlements.

The main focus shall therefore be:

* + - Mobilising Resources and financing the LRP process
    - Overall coordination and implementation of the LRP
    - Addressing grievances
    - Follow up and Monitoring.

A Community Coordinating Committee was established. The committee had members representing the Developer, Project Affected Persons and some community members who are not affected by the Project. Relevant government departments and local authorities were co-opted whenever necessary. The committee played an important role as a liaison between the Project Affected Persons and the Developer as well as other stakeholders.

The main focus of the Committee included:

* + - To act as representative body for the Project Affected Persons
    - To negotiate displacement plans and compensation on behalf of the affected people
    - To provide feedback and information to the Project Affected Persons
    - To liaise with other stakeholders on livelihood improvement opportunities and activities.
    - To monitor the subsequent implementation of the LRP
    - To address grievances

The local authorities and other government departments also played a role in ensuring that the entitlements reach the intended Project Affected Persons.

## Grievance Redress Mechanism

A full grievance redress procedure for all project affected has been developed by the Project Proponent and is included in Appendix 4 of this Livelihood Restoration Plan.

## Costs of the LRP and Budget

The total cost of displacements paid to the PAPs for the losses outlined in this LRP and additional benefits is **ZMW 149,703**. At present, all PAPs have been fully paid and displaced. The cost of displacements was fully covered by the Proponent. The table below gives a breakdown of compensation amounts paid to the PAPs.

Table 10.4‑1: Cost of displacements

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PAP**  **Identification**  **Code** | **Amount Received for Crop Compensation**  **(ZMW)** | **Resettleme nt Allowance**  **(ZMW)** | **Amount received for renting land for 3**  **seasons (ZMW)** | **Amount paid for other assets – e.g. fruit trees, shallow wells, etc.**  **(ZMW)** | **Total Compensation Amount received**  **(ZMW)** |
| 1 | 3,555 | 1,500 | 1800 | 0 | 6,855 |
| 2 | 2,145 | 1,500 | 1800 | 0 | 5,445 |
| 3 | 0 | 1,500 | 1800 | 900 | 4,200 |
| 4 | 720 | 1,500 | 1800 | 0 | 4,020 |
| 5 | 2,415 | 1,500 | 0 | 900 | 4,815 |
| 6 | 3,135 | 1,500 | 1,800 | 5,040 | 11,475 |
| 7 | 2,070 | 1,500 | 0 | 0 | 3,570 |
| 8 | 2,505 | 1,500 | 0 | 7,200 | 11,205 |
| 9 | 435 | 1,500 | 0 | 0 | 1,935 |
| 10 | 1,815 | 1,500 | 0 | 0 | 3,315 |
| 11 | 3,975 | 1,500 | 1800 | 0 | 7,275 |
| 12 | 2,253 | 1,500 | 1800 | 0 | 5,553 |
| 13 | 3,000 | 1,500 | 1800 | 0 | 6,300 |
| 14 | 2,940 | 1,500 | 0 | 0 | 4,440 |
| 15 | 2,310 | 1,500 | 1800 | 2,700 | 8,310 |
| 16 | 990 | 1,500 | 1800 | 0 | 4,290 |
| 17 | 8,625 | 1,500 | 0 | 4,500 | 14,625 |
| 18 | 1,815 | 1,500 | 0 | 9600 | 12,915 |
| 19 | 1,155 | 1,500 | 0 | 0 | 2,655 |
| 20 | 1,320 | 1,500 | 0 | 0 | 2,820 |
| 21 | 105 | 1,500 | 1,800 | 0 | 3,405 |
| 22 | 105 | 1,500 | 1800 | 0 | 3,405 |
| 23 | 765 | 1,500 | 1800 | 0 | 4,065 |
| 24 | 435 | 1,500 | 1800 | 0 | 3,735 |
| 25 | 825 | 1,500 | 1800 | 0 | 4,125 |
| 26 | 1,650 | 1,500 | 1800 | 0 | 4,950 |

## Monitoring and Evaluation

Monitoring and Evaluation (M&E) forms an essential component of project implementation by providing necessary information about the involuntary resettlement aspects of the project and measuring the extent to which the objectives of the LRP have been accomplished. Monitoring is a key component of the LRP, and it also entails evaluation effectiveness of the grievance management process.

### Objectives of Monitoring and Evaluation

The main objectives of the M&E are as follows:

* + - To ensure proper implementation of the activities mentioned in RAP on timely basis,
    - To ensure that Project Affected Persons (PAPs), who are eligible for compensation, receive full entitlements within agreed timeframe,
    - Ensure that complaints and grievances lodged by the PAPs are followed up and necessary corrective measures are taken, wherever required.

### Approach of the M&E Mechanism

The M&E mechanism is based on two approaches:

* **Internal Monitoring:** This was undertaken by CEC personnel, who had the overall responsibility of conducting regular internal monitoring of the progress of project implementation. The monitoring will follow a systematic evaluation of implementation of the recommendations made in this LRP.
* **External Evaluations:** This evaluation will be undertaken by an external agency, such as a recognized NGO, or other agency, to be engaged by CEC. The external agencies will be responsible for a comprehensive evaluation of the implementation of compensation activities and milestones on a regular basis. The evaluation process will review results of internal monitoring, in addition to the overall compliance with the study recommendations. It will assess the extent to which lives, and livelihood of PAPs have been restored and determine the overall adequacy of entitlements.

### Monitoring and Evaluation Indicators

Indicators and targets were established to measure the effectiveness of the implementation of action plans under the LRP. The table below describes the different activities under LRP and their respective monitoring indicators.

**Table 24: Monitoring of LRP Activities**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Aspect** | **Indicator** | **Variable** | **Frequency of**  **Monitoring** | **Responsibility** | **Cost**  **(US$)** |
| 1 | Crop fields | Affected fields/land | Area of cultivable land taken  up by the project. | Once off | Senior Manager-HSES and Risk | 280 |
| 2 | Fruit trees | Affected fruit trees | Number and type of fruit trees  affected by the project | Once off | Senior Manager-HSES and Risk | 280 |
| 3 | Access routes | Access routes displaced by the project | * Number of footpaths displaced by the project * Number of dirty tracks displaced by the project | On-going | Senior Manager-HSES and Risk | 1,200 |
| 4 | Physical structures | Physical structures displaced by the project | Number and type of structures displaced by the solar park and  transmission line | Quarterly | Senior Manager-HSES and Risk | - |
| 5 | Compensation, Re- establishment, and Rehabilitation | Compensation and reestablishment of affected owners/ individuals | * Number of owners compensated by type of loss. * Amount compensated by type and owner. | Once off | Senior Manager-HSES and Risk and external stakeholders | 280 |
| 6 | Socio-economic | Changes to status of community especially women | * Use of credit facilities. * Employment through jobs and other activities resulting from the project. | Quarterly | Senior Manager-HSES and Risk and external stakeholders | 1,500 |
|  |  | Household earning capacity | * Ownership of assets. * Employment status of economically active members. * Income source, apart from compensation payment. | Quarterly | Senior Manager-HSES and Risk and external stakeholders | 850 |
| 7 | Consultation | Consultation program operation | * Number of local consultative meetings held. | Monthly | Senior Manager-HSES and Risk and external  stakeholders | 1,600 |

98

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | * Number of local government leaders engaged. * Number of participating NGOs/CSOs. * Number of PAP consultative meetings held |  |  |  |
|  |  | Grievances resolved | * Number of grievances received. * Number of grievances resolved. * Number of outstanding grievances not resolved. * Number of cases referred to court. | Monthly | Senior Manager-HSES and Risk and external stakeholders | 1,010 |
| 8 | Training | Training programs | Number of affected population trained in Project-related  training courses. | Monthly | Senior Manager-HSES and Risk | 1,500 |
|  |  |  |  |  |  |  |

### Monitoring Methods

The M&E continued for three (3) years after economic displacements to assess the post LRP impacts. The M&E aimed to identify and select a set of appropriate monitoring parameters and indicators and collecting information on them to assess their changes. Participation of stakeholders especially the project affected persons, women and vulnerable groups was ensured in the M&E process. The table below discusses the various qualitative and quantitative monitoring tools.

Table 10.5‑1: LRP Monitoring Tools

|  |  |  |
| --- | --- | --- |
|  | **Method** | **Description** |
| 1 | Focused Group Discussion | Consultations held with key stakeholders, e.g. local government bodies, NGOs, community  leaders, PAPs. |
| 2 | Key Informant Interviews | Discussions held with individuals like local leaders, workers or persons with knowledge and experience of relocation activities and  implementation. |
| 3 | Community Public Meetings | Public meetings held at project sites to gather  information on performance of project activities. |
| 4 | Direct Observation | Field surveys to observe the status of LRP report implementation together with individual  or group interviews. |
| 5 | Informal interviews/ surveys | Informal surveys of PAPs, project staff and Implementing agency personnel using non-  sampled methods. |

### Key outcomes of the monitoring and evaluation exercise

To date, M&E has been done by the Developer. Monitoring was done to establish the quality of life of the PAPs after being displaced. The key aspect that has been monitored from 2020 to date is the consistency of the PAPs in engaging in seasonal agriculture, their incomes, status of living, etc. The monitoring program showed that only a few PAPs from those that were assigned alternative land for continuation of seasonal farming had consistently grown something on the newly assigned land. This is in line with the findings of the socio-economic surveys undertaken in 2018/2019 which established that seasonal farming was not the main source of livelihood for the PAPs who had encroached on the project land. The monitoring program also gave evidence that the interventions given to the PAPs significantly resulted in increased agriculture productivity and income among the PAPs. The records show that on average, the PAPs income increased by 68% (refer to full monitoring report in appendix 8).

Table 10.5‑2: comparison of crop value of selected PAPs between 2019 and 2023

|  |  |  |  |
| --- | --- | --- | --- |
| **PAP**  **identification Code** | **Crop value in 2019 (ZMW)** | **Value of crop sales in 2023**  **(ZMW)** | **Percent increase (%)** |
| 17 | 2,875 | 6,150 | 53 |
| 8 | 835 | 650 | -28 |
| 24 | 145 | 900 | 83 |
| 18 | 605 | 1,850 | 67 |
| 19 | 385 | 1,200 | 68 |

Note: comparison for other PAPs could not be shown because they did not plant any crop in the 2022/2023 season

### Livelihood Restoration Implementation Budget

The tentative budget for effectively implementing the livelihood restoration plan is K1,173,648.30. InnoVent - CEC Garneton North will be responsible for mobilizing and dispensing the budget until LRP is fully implemented. The disbursement of this budget will be aligned with the implementation of the activities. The table below shows the breakdown of the LRP budget.

|  |  |  |
| --- | --- | --- |
| S/N | Activity | Amount |
| 1 | Compensating project affected households | 149,703.00 |
| 2 | Monitoring RAP activities | 242,250.00 |
| 3 | Managing grievances | 150,000.00 |
| 4 | Livelihood Restoration completion audit | 285,000.00 |
| 5 | Stakeholder engagement activities | 100,000.00 |
| 6 | Administrative costs | 140,000.00 |
|  | Sub total | 1,066,953.00 |
|  | Contingency amount @10% | 106,695.30 |
|  | TOTAL | 1,173,648.30 |

DECLARATION OF AUTHENTICITY OF REPORT CONTENTS

This is to confirm that the contents of this Livelihood Restoration Plan (LRP) reflect the updated status of the baseline environment at the Project site and within the broader project area for the Garneton North Solar PV Project. We trust that the information described in this updated LRP provides adequate information to satisfy the laws and regulations of Zambia regarding construction and operation of the proposed Solar PV Project and meet the Zambia Environmental Management Agency’s (ZEMA) requirements for approval.

**Caroline Sinkamba**

Senior Manager- HSE and Risks Copperbelt Energy Corporation Plc

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    7. IFC, 2012, Performance Standards on Environmental and Social Sustainability.

APPENDICES

APPENDIX 1: DETAILS OF THE PROJECT AFFECTED PERSONS

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APPENDIX 7.3A: SIGNED AGREEMENT

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APPENDIX 7.4: COMPENSATION PAYMENT

APPENDIX 8: CERTIFICATE OF INCORPORATION