Dominica Geothermal Development

NZ Ministry of Foreign Affairs & Trade

Abbreviated Resettlement Action Plan

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Glossary

Acronym	Meaning
AoI	Area of Influence
ARAP	Abbreviated Resettlement Action Plan
CIA	Central Intelligence Agency
CLO	Community Liaison Officer
DGDC	Dominica Geothermal Development Company Limited
DOMLEC	Dominica Electricity Services Limited
DOWASCO	Dominica Water and Sewerage Company Limited
DSWMC	Dominica Solid Waste Management Corporation
EC	Eastern Caribbean Dollar
EIA	Environmental Impact Assessment
EHS	Environmental Health and Safety
EPC	Engineer, Procure and Construct
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
GDP	Gross Domestic Product
GIS	Geographic Information Systems
GoCD	Government of the Commonwealth of Dominica
HSE	Health, Safety and Environment
IFC	International Finance Corporation
kW	Kilowatt
LRP	Livelihood Restoration Plan
MTPNP	Morne Trois Pitons National Park
MW	Mega Watt
NZ	New Zealand
PAP	Project Affected Person
PS	Performance Standard
ROW	Right of Way
SEP	Stakeholder Engagement Plan
SIA	Social Impact Assessment
ToR	Terms of Reference
USD	US Dollars
WB	World Bank
WBG	World Bank Group
WHO	World Health Organisation

Important note about your report

The sole purpose of this report and the associated services performed by Jacobs New Zealand Limited ("Jacobs") is to describe the Environmental and Social Impact Assessment (ESIA) for the Dominica Geothermal Power Project development in accordance with the scope of services set out in the contract between Jacobs and the New Zealand Ministry of Foreign Affairs and Trade (the Client). That scope of services, as described in this report, was developed with the Client, the Government of the Commonwealth of Dominica (GoCD) and the Developer (Dominica Geothermal Development Company (DGDC) established and owned by the GoCD).

Jacobs has been contracted by the Client to undertake the conceptual design and overall project definition through their engineering team. In preparing this ESIA report, Jacobs has relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided. Except as otherwise stated in the ESIA report, Jacobs has not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

Jacobs derived the data in this report from information sourced as noted in the ESIA volumes and/or available in the public domain at the time or times outlined in this report. The passage of time, manifestation of latent conditions or impacts of future events may require further examination of the project and subsequent data analysis, and re-evaluation of the data, findings, observations and conclusions expressed in this report. Jacobs has prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

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1. Introduction

1.1 Background

This Draft Abbreviated Resettlement Action Plan (ARAP) was prepared on behalf of the New Zealand (NZ) Ministry of Foreign Affairs & Trade for the Dominica Geothermal Power Plant Project, located in the Roseau Valley, Dominica. The Draft ARAP has been developed based on the results of the census survey conducted by Dominica Geothermal Development Company (DGDC) of potentially affected landowners at the power plant and along the reinjection line route. Although a socio-economic census was conducted for purposes of ARAP, it should be noted that a number of the landowners along the reinjection line are no longer in country and as a result for 2 parties, the full census was not able to be completed. Further information has been added based upon phone surveys, but this ARAP will need to be supplemented with updated census data in Q4 2018.

In September 2017, the Island was devastated by Hurricane Maria. This Draft ARAP has been developed post the Hurricane and reflects changes in land use, land acquisition and livelihood restoration for the Project post the disaster.

1.2 Project Location

The proposed Project is located in the Commonwealth of Dominica, a small island developing state in the Caribbean with a population of approximately 72,000 people and a land area of approximately 750 km^2. Dominica is located near the centre of a string of islands known as the Lesser Antilles, between the neighbouring French territories of Martinique and Guadeloupe. The proposed Project is located in the Roseau Valley in the Wotten Waven Geothermal System (Figure 1.1).

Within the Roseau Valley, a primary area of influence has been identified, comprising the three main communities in closest proximity to the proposed Project footprint. Due to their proximity, they are the most likely to affected by any employment, resettlement, community health and safety issues which arise from the Project. These communities of relevance are namely Trafalgar, Wotten Waven and Laudat, as shown in Figure 1.1.

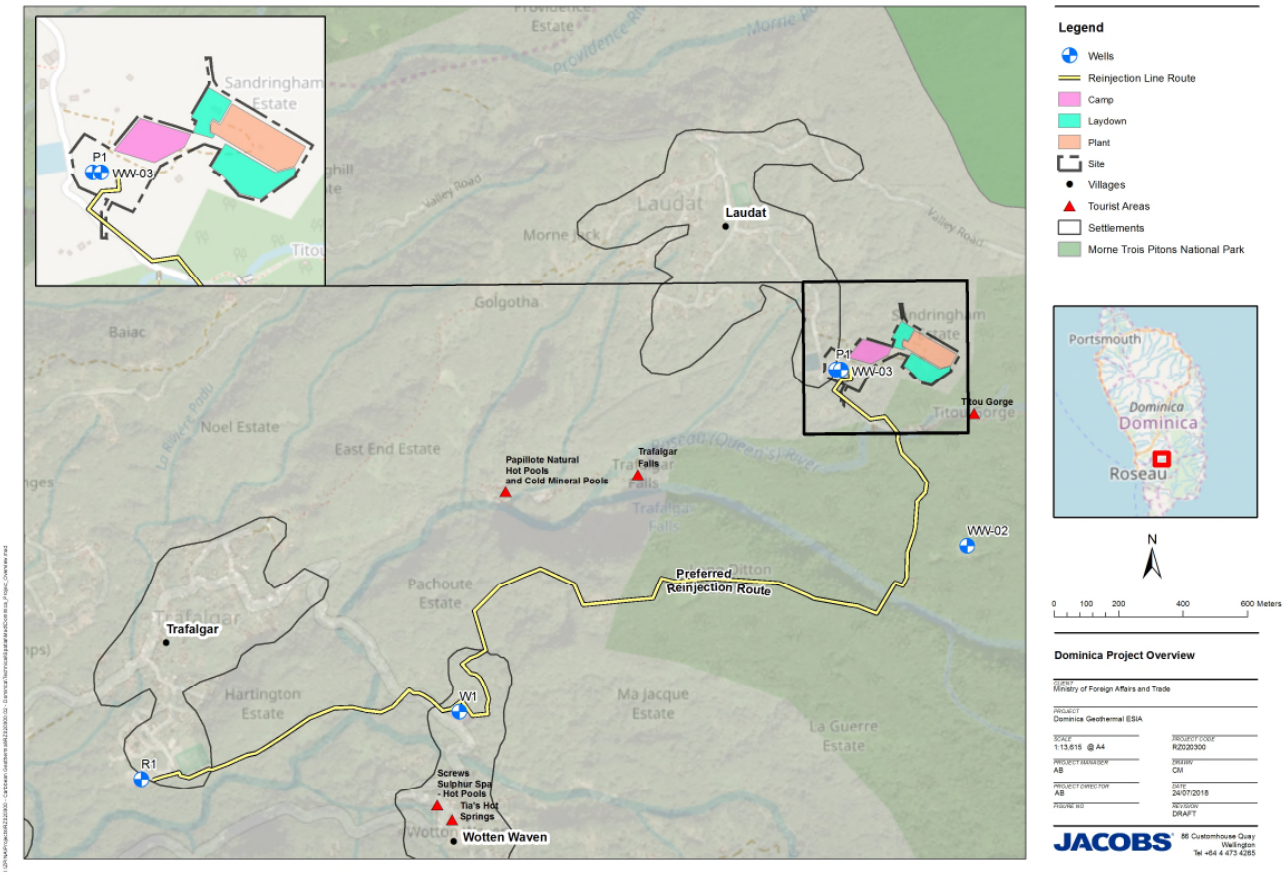

Figure 1.1 : Location of Roseau Valley and Site of proposed

1.3 Project Components

The Project comprises the development of a two-unit geothermal power plant with a gross capacity of 7 MW in the Roseau Valley, Dominica. This covers the following stages: construction, completion, testing, commissioning, ownership and operation including the steamfield, required electrical connections and integration with associated infrastructure. The preliminary design for the Project is ongoing, with detailed design to be completed following a formal tender process for an Engineer, Procure and Construct contractor(s) in 2018.

The power plant is proposed to be located close to the village of Laudat. Three well pads will be used for the Project with a production well and reinjection well for condensate at Laudat by the power plant and two further reinjection wells at Wotten Waven and Trafalgar. The preferred injection line route will be finalised in close co-ordination with process engineering, mechanical, geotechnical and civil engineering design disciplines, along with the Government, Land and Survey Division and environmental and social scientists. An overview of the Project area is provided in Figure 1.1above.

Land acquisition for the drilling phase of the Project is still being finalised. The Government has completed negotiations for ownership of the existing well pads (WW-01, WW-03 and R1), whose locations are presented in Figure 1.1, along with the preferred reinjection line route. Negotiations for WW-02 are ongoing and are close to being complete. This route alignment will be finalised in close co-ordination with process engineering, mechanical, geotechnical and civil engineering design disciplines, along with the Government, Land and Survey Division and environmental and social scientists.

The conceptual power plant layout is displayed in Figure 1.2 and land still needs to be acquired to site the power plant and other associated infrastructure.

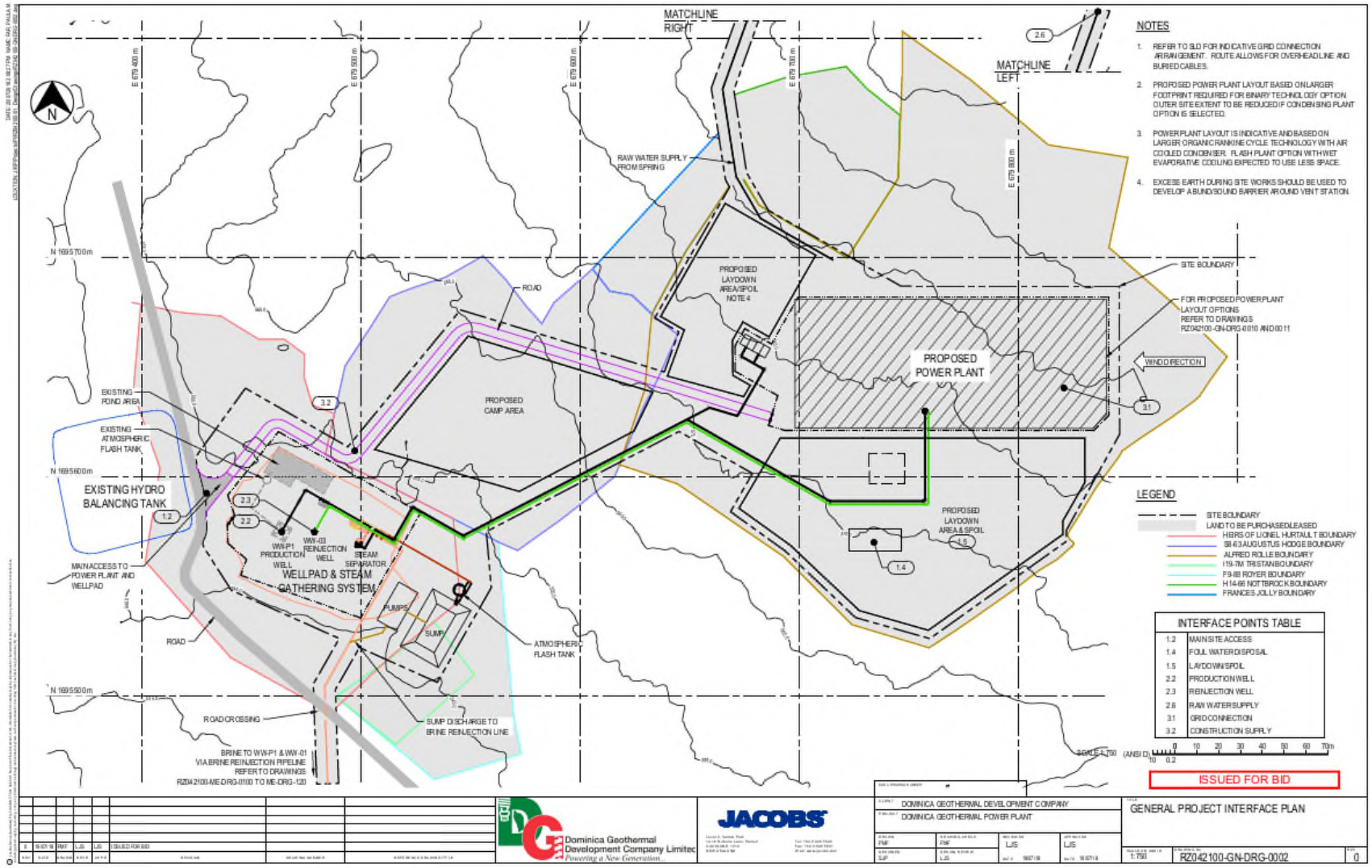

Figure 1.2 : Proposed power plant Site and Production Steamfield Layout

The area proposed for Project development is generally sparsely populated, characterised by some agroforestry and naturally vegetated areas. Brief descriptions of the main locations of Project infrastructure are as follows:

- Power plant comprising 2 x 3.5 MW units (either single flash steam condensing cycle or organic Rankine cycle units (binary turbine), which will be adjacent to wells WW-P1 and WW-03. The binary power plants may use wet cooling or dry cooling;
- Production well WW-P1 – The existing geothermal production well at Laudat is indicated to have potential to generate 6 to 9 MW and will be the sole production well for the project;
- Reinjection wells WW-R1 (located in Trafalgar) and WW-01 (located in Wotten Waven) – The used geothermal fluid (brine and possibly some steam condensate) produced from production well WW-P1 would be disposed of into reinjection wells WW-R1 and WW-01 via a 250 to 300 mm diameter reinjection pipeline of up to 3.5 km in length;
- Steamfield infrastructure including two phase piping, steam separator, atmospheric flash tank, brine collection and disposal system, condensate collection and disposal system, pressure relief system, storage sump and rock muffler;
- Supporting infrastructure including existing well pads, turbine building, primary and ancillary equipment, cooling system, workers camp, and water supply; and
- 11 kV interconnection to the DOMLEC electricity grid at the power plant site.

1.4 Efforts to Minimise Resettlement

1.4.1 Power Plant

Several power plant sites and reinjection pipeline route options were considered as part of the Project (refer to ESIA Volume 1: Introduction). Multiple sites were considered for the power plant once the geothermal resource was identified. The site was gradually moved south-east to increase the separation distance from the concentrated local population, in order to reduce noise impacts.

1.4.2 Reinjection Pipeline Route

In terms of the reinjection pipeline route, four options were considered. One proposed route through Laudat was ultimately rejected to avoid displacement/disruption and another route was rejected as it was scheduled to rely on DOMLEC infrastructure, which presented coordination challenges for the Project. The third option was rejected because it was considered technically too difficult due to topography e.g. steep ravines. Ultimately, the power plant site location and preferred reinjection pipeline route were chosen to avoid disruption to the community and in consideration of economic and technical constraints. It is also important to note that at this stage, there is still some flexibility in the exact footprint of the reinjection route pipeline. As the pipeline corridor is anticipated to only be 10 m (to allow for access, maintenance and flexibility around design), DGDC will still have some discretion to locate each portion of the pipeline within an individual property. In other words, there are still opportunities to avoid displacement of structures, crops or other assets along the reinjection route line during this stage of design.

1.5 ARAP Purpose, Scope and Approach

Development of the power plant site and reinjection route pipeline will result in the acquisition of up to 13 properties either partially or in their entirety, and as a result cause physical displacement of three residential structures and economic displacement of six farmers. Only one property is occupied by a one-person household.to OP 4.12, displaced persons may be classified as:

"those who are affected by the involuntary taking of land resulting in (i) relocation or loss of shelter; (ii) loss of assets access to assets; or (iii) loss of income sources or means of livelihood whether or not the affected person must move to a different location."

World Bank resettlement policies recognise the need to provide resettlement, compensation, and / or livelihood restoration assistance to persons that are currently utilising project affected land. Thus, the displacement of residents and farmers from the site and reinjection route are addressed in this ARAP.

The scope of the ARAP process included the following steps:

- Establishing the legal and guidance framework for managing displacement impacts, including national and international requirements;
- Identification, consultation and socio-economic surveys with all of the PAPs;
- Socio-economic analysis, including establishing the extent of vulnerability of the PAPs;
- Inventory and valuation of properties, structures, and crop assets to establish the basis for associated compensation;
- Consultation with relevant parties to identify any potential alternative land of comparable productive value for relocation;
- Consultation with PAPs on potential options for resettlement site options, livelihood restoration, compensation or improvement measures. These may include, for example, assistance to diversify income generating activities (such as training in new skills), financial management training and credit opportunities, business and enterprise training;
- Establishing the necessary steps for implementation including:
    - Confirming final compensation / implementation budget, including all financial compensation, and costs for land acquisition, loss of structures,), loss of crops, transitional support, livelihood restoration measures and independent monitoring;
    - Establishing the grievance and redress mechanism;
    - Confirming the roles and responsibilities within the GoCD and DGDC team regarding the implementation process; and
    - Confirming requirements for monitoring and evaluation.

1.6 Structure of the ARAP

The content of this document is as follows:

- Section 1: Introduction;
- Section 2: Legal and Institutional Framework;
- Section 3: Socio-Economic Background of Affected Community and PAP Census;
- Section 4: Identification of Project Impacts;
- Section 5: Eligibility and Entitlements;
- Section 6: Valuation and Compensation;
- Section 7: Vulnerability Assistance
- Section 8: Stakeholder Engagement;
- Section 9: Resettlement Sites;
- Section 10: Roles and Responsibilities;
- Section 11: Grievance Management;
- Section 12: Monitoring and Evaluation;
- Section 13: Budget and Schedule; and
- Section 1: References.

2. Legal and Institutional Framework

2.1 Introduction

The Project is required to meet nationally and internationally accepted environmental and social safeguard standards in order to ensure that community benefits from the Project are maximised, and that potential adverse environmental and social impacts are minimised. Relevant national and international requirements are summarised below. In the event that international standards and national standards differ, the higher standard shall apply to the Project.

2.2 National Requirements

There are a number of national policies, laws, regulations and guidelines that guide relevant environmental, social and economic issues in Dominica. The laws and regulations also provide the relevant instruments for the effective management of land acquisition and proper institutional coordination. Of primary relevance is the Land Acquisition Act.

The Land Acquisition Act, Chapter 53:02 deals with the acquisition of land by the state and clearly outlines procedures in acquiring private lands for state use. The Act covers the following areas:

i. Acquisition of land and abandonment of acquisition;

ii. Appointment and powers of Board of Assessment;

iii. Determination of Small Claims for Compensation;

iv. Provisions Governing Assessment of Compensation;

v. Miscellaneous:

   a) Absentee owners

   b) Compensation to persons interested in adjacent land

   c) Special provisions as to leases

   d) Persons in possession to be deemed owners

   e) Fees and expenses of Board

   f) Conveyancing etc.

   g) Payment of compensation

   h) Exemption from stamp duty and fees

   i) Limitation of time for making claims

   j) Assaulting or obstructing officer

   k) Saving

The Act includes a description of how compensation should be determined. The general process of compulsory land acquisition under the Land Acquisition Act, Chapter 53:02 is described below in Figure 2.1.

Compulsory land acquisition according to the Land Acquisition Act consists of an evaluation of the market value of the land conducted by the Department of Lands, a Cabinet paper establishing government acquisition of the land, follow by a negotiation or agreement to compensation with the relevant land owner. Compensation values are determined by the government Land Surveys Department.

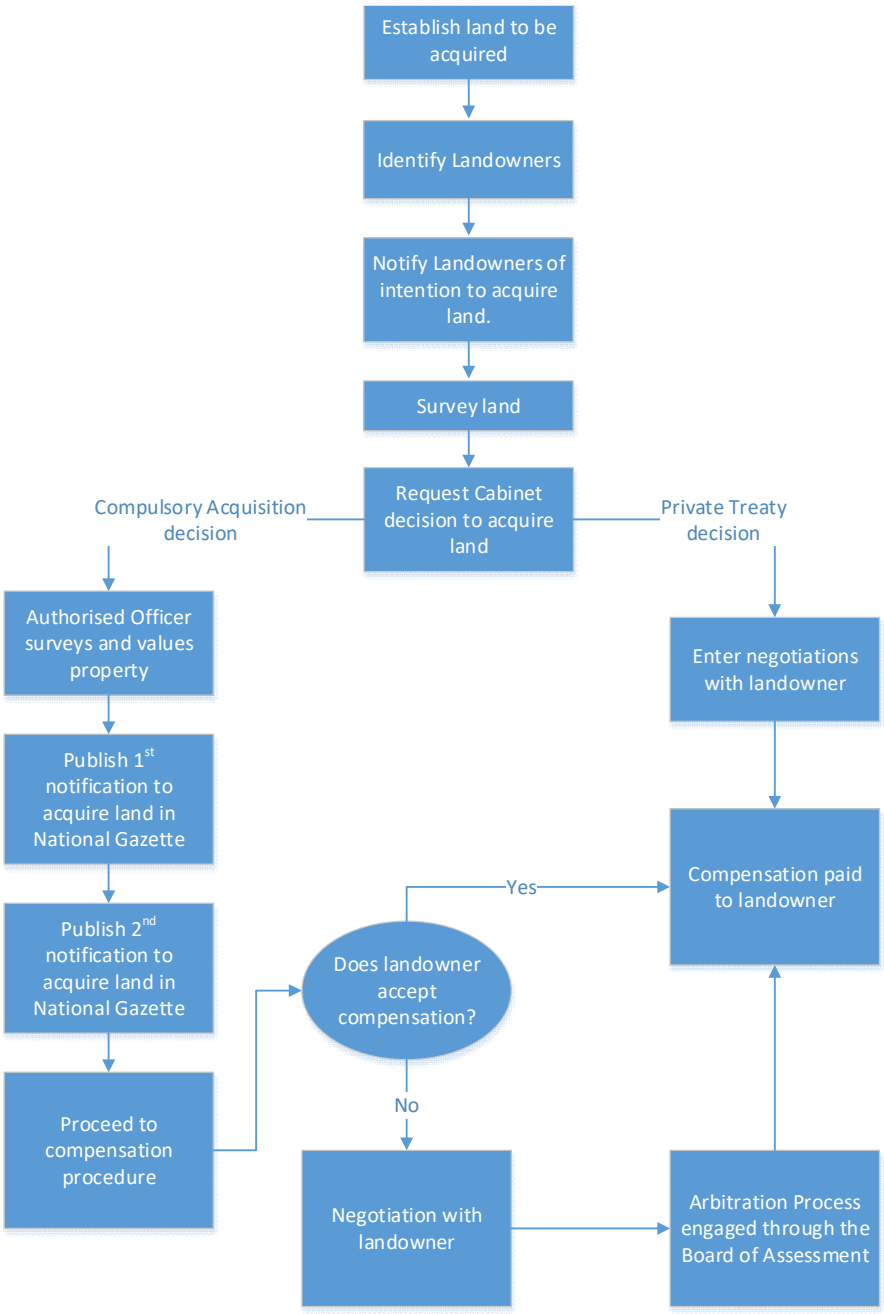

Figure 2.1 : The General Process of Acquiring Land through Compulsory Acquisition in Dominica

This process differs from the World Bank land acquisition and resettlement requirements in that compensation under OP 4.12 requires the evaluation to cover full replacement cost for each party, rather than market value covered by national requirements. In addition, World Bank resettlement requirements consider compensation for land users without legal rights, support for vulnerable parties, and livelihood restoration measures that are not covered under national law. World Bank land also requires that compensation be completed prior to Project construction and that consultation associated with this process be well documented. A gap analysis between National Law / Practice and World Bank requirements is show in Table 2.1.

Table 2-1 Policy GAP Analysis

Conflict/Gap	Local Legal Framework/Policy	World Bank Policy Requirements	Measures to Address Conflict/Gap
Restoration of livelihoods and living standards	There is no existing legislation or official policy document that specifically supports resettlement initiatives in Dominica except for that created specifically in response to TS Erika and Hurricane Maria	OP 4.12 Involuntary Resettlement: Section 6 (c) – Where necessary……compensation should also include measures to ensure that displaced persons are offered support after displacement for a transition period, the time likely to be needed to restore their livelihood and standards of living. The displaced persons should also be provided with development assistance such as land preparation, credit facilities, training or job opportunities, in addition to the other compensation measures stipulated.	The Social and Environmental Safeguards of the World Bank take precedence. All PAPS should be eligible for full compensation benefits per World Bank Policy requirements
Support for displacement	World Bank type policy pertaining to the restoration of income sources and livelihoods, support after displacement for a transition period; do not apply except as has been developed in response to natural disasters	Section 2 (c) – Displaced persons should be assisted in their efforts to improve their livelihood and standards of living or at least to restore them in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.	The Social and Environmental Safeguards of the World Bank take precedence. All PAPS should be eligible for full compensation benefits per World Bank Policy requirements
Development assistance	The provision of elderly assistance, employment under the National Employment Programme; Free health services for Elderly and needs based social support are all available to qualifying PAPS	Section 2 (c) – Displaced persons should be assisted in their efforts to improve their livelihood and standards of living or at least to restore them in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.	The Social and Environmental Safeguards of the World Bank take precedence. All PAPS should be eligible for full compensation benefits per World Bank Policy requirements
Opportunity to derive development benefits from project	There is no existing legislation or official policy document that specifically supports resettlement initiatives in Dominica	Performance Standard 5, Section 9 – The client will also provide opportunities to displaced persons to derive appropriate development benefits from the project,	The project will create temporary job opportunities during the civil plant and pipeline construction While some of the jobs will require specialized skills that may not be available locally, for non-specialized jobs, the project is expected to create equal employment opportunity for both men and women. In that regard the DGDC will as far as possible ensure that service

Conflict/Gap	Local Legal Framework/Policy	World Bank Policy Requirements	Measures to Address Conflict/Gap
			providers give priority to the employment of workers originating from the Roseau Valley Communities.
Timing for the Payment of Compensation and Taking possession of Land Acquired	The Land acquisition Act Chpt. 53:02 is silent on the timing for compensation payments Sections 3 and 5 permits for access to lands any time after the publication	OP 4.12 Possession of the land acquired and related assets only after compensation has been paid.	The Bank's policy will take precedence. Identification of land owners and tenants has already been done and notification to the authorized officer completed. MOUs between Ministries are pending to facilitate monitoring and reporting by the DGDC

2.3 Institutional Framework for Addressing Land Acquisition and Leases

The Department of Lands already has a process in place for addressing land acquisition and leases including any grievances associated with this process. As such, DGDC will work closely with the Department of Lands during the resettlement process for this Project to ensure consistent coordination. As part of this process, the World Bank will complete an audit of the GoCD's institutional capacity for resettlement along a proposed action plan for any steps proposed to enhance the institutional capacity of this agency.

The following are procedures covered by the Act are applicable to the land acquisition process required for the geothermal project:

- Preliminary notification and power to enter the land:
  if the Commissioner of Lands (the Authorized Officer) determines that any land is required for public purpose and it is necessary to make a preliminary survey or other investigation of the land, he/she may cause the publication of notification to that effect; and thereafter it shall be lawful for the Authorized Officer or his/her agents to enter on to the land to undertake the investigative works required.

- Power to apply land to purposes of acquisition without waiting for formal vesting:
  at any time after the publication of a notification of the intention to acquire land for public purpose, it appears to the Authorised Officer that this land should be acquired, he/she may make an immediate declaration to that effect; and it is lawful for him/her to direct the Authorized Officer to do any work on the land connected with the use for which the land is being acquired.

- Appointment of Board of Assessment:
  in the event that the parties cannot reach agreement on compensation to be paid, a Board of Assessment may be appointed and granted full power to assess, award and apportion compensation in such cases, in accordance with the provisions of the Act.

Sections 3 of the Act permits access to the land for investigative purposes before compensation is paid; Section 5 allows the government to take possession of land acquired and to commence development before compensation is paid. These provisions are not consistent with the World Bank's policy on involuntary resettlement, which states that the client will take possession of land acquired and related assets only after compensation has been made available and, where applicable, resettlement sites and moving allowances have been provided to the displaced persons in addition to compensation.

Given the commitment of the Government to comply with the Bank's policy, the DGDC has been delegated with the authority to act on behalf of the Ministry of Energy to provide support to the department.
In relation to payments, though estimates have been provided to enable realistic budgetary allocation to be made for land acquisition in the national budget, if this is deficient, it will likely hinder the ability of the government to comply with the provision. Further, in cases where agreement over the payment of compensation cannot be reached between the Authorized Officer and the land owner, the appointment of a Board of

Assessment would further delay payment. Experience has shown that negotiations for compensation (using either medium) can sometimes take several years to be concluded.

2.4 International Requirements

Relevant World Bank Group (WBG) requirements for this Project are contained in OP 4.12. According to the standard, resettlement is considered involuntary when affected individuals or communities do not have the right to refuse land acquisition or restrictions on land use that result in displacement which can occur when the buyer can resort to lawful expropriation when negotiated settlement fails. As stated earlier, as this Project can resort to expropriation or impose legal restrictions on land use through the Government of Dominica if negotiations fail, this Project triggers OP 4.12. OP 4.12 addresses land acquisition and involuntary resettlement. It recognises that land acquisition for projects and restrictions on land use can have adverse impacts on communities and people that presently use the land intended for a project.

2.4.1 OP 4.12- Involuntary Resettlement

According to OP 4.12, involuntary resettlement may cause severe long-term hardship, impoverishment, and environmental damage unless appropriate measures are carefully planned and carried out. For these reasons, the overall objectives of the Bank's policy on involuntary resettlement are the following:

- Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs.
- Where it is not feasible to avoid resettlement, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons displaced by the project to share in project benefits. Displaced persons should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs.
- Displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.

OP 4.12 covers direct economic and social impacts that both result from Bank-assisted investment projects and are caused by:

- the involuntary taking of land resulting in relocation or loss of shelter;
  - loss of assets or access to assets; or
  - loss of income sources or means of livelihood, whether or not the affected persons must move to another location; or
  - the involuntary restriction of access to legally designated parks and protected areas resulting in adverse
- impacts on the livelihoods of the displaced persons.

2.5 World Bank Group Supporting Guidance Documents

The following summarises some key reference and supporting documents, have been referenced in development of this preliminary ARAP:

- OP 4.12 - Involuntary Resettlement Policy
- International Finance Corporation Environmental and Social Development Department – Handbook for Preparing a Resettlement Action Plan (2002); and
- World Bank - Involuntary Resettlement Source Book (2004).

Other useful guidelines are referenced within the OP 4.12.

3. Socio-Economic Background of Affected Community and PAP Census

3.1 Regional and Local Socio-Economic Context

A socio-economic baseline study was carried out in 2017 as part of the ESIA for the Project. Further detailed surveys were completed as part of the ARAP process in March-August 2018 to inform resettlement and livelihood restoration planning post Hurricane Maria. A summary of the PAP socio-economic census surveys conducted in 2018 are presented below in Section 3.9.

3.2 Regional Overview

Dominica is a mountainous Caribbean island nation with natural hot springs and tropical rainforests. According to the Population and Housing Census of 2011, Dominica's population was 71,293 (Commonwealth of Dominica Central Statistical Office, 2011). Between 1991 and 2001, the population of the main townships of Dominica declined, including within the capital Roseau. The population of Dominica shows little increase in general, due to the exodus of people to other countries such as the more prosperous the United States, the United Kingdom and Canada.

In the Project vicinity, approximately 1,800 people live in the Roseau Valley, of which nearly 1,000 live in Trafalgar and Shawford, and the remaining in the hamlets of Wotten Waven/Casseau, Copthall, and Laudat. According to the 2011 census, the Roseau Valley gained 500 inhabitants between 2001 and 2011, i.e. a substantial increase of 32% (Commonwealth of Dominica Central Statistical Office, 2011). According to the Central Statistical Office, average household size in the Roseau Valley is 2.7. The breakdown of population by gender shows that Dominica consists of slightly higher men than women, national averages 49% females and 51% males.

3.3 Hurricane Maria 2017

In September 2017, Hurricane Maria hit Dominica with catastrophic effect. The economy came to a halt. Roads, bridges, and public utility systems were destroyed. The agriculture sector was devastated, with 100 percent loss of crops and substantial destruction to trees and livestock, which disproportionally affected the most vulnerable segments of Dominica's population. Other key sectors, including tourism, sustained substantial losses, with all hotels reporting serious damages and room availability down to near half of pre-storm levels. The rainforests, the main tourist attraction, were destroyed. Public services and transport activities were severely hampered. Most secondary roads, critical to access arable land and transport labour and agricultural products to markets and ports, were left inaccessible. Surveys in the Project affected communities suggest that 90% of the respondents have lost the roofs of their houses, and 95% of the respondents have lost their livelihoods.[1]

Based upon an initial assessment of impacts to each affected sector by the World Bank, Hurricane Maria resulted in total damages of EC$2.51 billion (US$930.9 million) and losses of EC$1.03 billion (US$380.2 million), which amounts to 224 percent of 2016 gross domestic product (GDP). Most damages were sustained in the housing sector (38 percent), followed by the transport (20 percent) and education sectors (8 percent). The greatest economic losses were sustained in the agriculture sector (32 percent), followed by the tourism (19 percent) and transport sector (14 percent).[2]

[1] WBG Post-Disaster Needs Assessment, Hurricane Maria, September 18, 2017 completed November 7, 2017.

[2] WBG Post-Disaster Needs Assessment, Hurricane Maria, September 18, 2017 completed November 7, 2017.

3.4 Socio-Economic Area of Influence

Within the Roseau Valley, three main communities of Trafalgar, Wotten Waven and Laudat were considered as the primary socio-economic area of influence (AoI) because they were in closest proximity to the proposed Project and represent the main communities that would be likely to be impacted by any employment, resettlement, community health and safety issues. All of these fall within the Roseau Valley and data from the Roseau Valley itself is utilised where appropriate and when more detailed data for each community is not available. Figure 1.1 above shows the location of Trafalgar, Wotten Waven and Laudat**.**

3.4.1 Trafalgar

Trafalgar is located in the eastern portion of the Roseau Valley. The bulk of the population (959) in the valley reside in this area and it includes the most residentially developed of the three affected areas in the AoI. The area is characterised by brightly coloured concrete houses and includes a health centre and a primary school. At the bottom of the valley, the Trafalgar area is used for agriculture including vegetables, herbs and fruit orchards. Trafalgar Falls is also a tourist destination. The community generally has pride in their natural resources and expressed some mild complaints about the increased rate of rust on metal structures in the community from the steam/sulphur in the area.

3.4.2 Wotten Waven

Wotten Waven is well known for its natural hot sulphur springs and is located in a steep, inaccessible area. The wider area surrounding Wotten Waven area is characterised by agriculture including vegetables, herbs and fruit orchards. The area also includes some residences (population is 313), a health centre and a primary school. Since the 1990s there has been a considerable development in tourism services in the Roseau Valley. This is centred on hiking and the hot sulphur water spas in Wotten Waven.

3.4.3 Laudat

Laudat is a small village nestled between three mountains: Morne Watt, Morne Micotrine, and Morne Trois Pitons. Laudat, contains a sector of rainforest where numerous trees are felled for economic development. Laudat also includes a small population of 321 and is served by a health centre.

3.5 Economic Profile

Gross Domestic Product (GDP) in Dominica estimated in 2016 was 812 million dollars according to the CIA World Factbook. The economy in Dominica used to be primarily driven by agriculture, but has recently shifted towards tourism as the Government increasingly promotes Dominica as a tourist destination. The income of the residents of Trafalgar, Wotten Waven and Laudat was primarily derived from agriculture, which comprised family-based farming for both local consumption and commercial purposes, and tourism. Most of the Roseau Valley residents had several jobs, including employment in the town of Roseau. However, since Hurricane Maria the World Bank has estimated that economic damages and losses amount to approximately US$1.37 billion or 226 percent of 2016 GDP.[3] Agriculture, livestock, fisheries and tourism show the steepest declines.

In 2016 according to the CIA World Factbook, the average unemployment rate in Dominica was about 23%. Now post Hurricane-Maria, the Post Disaster Report stated that a “significant” proportion of the labour force is unemployed. The report does not quantify what is considered “significant”. However, it could be assumed that the unemployment rate post Hurricane Maria, is greater than 23% and the livelihoods of its population were likely altered as a result.

3.5.1 Agriculture

Agriculture general accounts for about 20% of GDP in Dominica and employs about 40% of the labour force. As of late 2017 pre-Hurricane Maria, there were about 2,000 hectares (4,900 acres) of land being used as pasture

[3] WBG Post-Disaster Needs Assessment, Hurricane Maria, September 18, 2017 completed November 7, 2017.

land for animal husbandry, comprising 2.7% of the total land area. In addition to tourism, residents of the Roseau Valley were engaged in crop cultivation and agroforestry. Many properties in the study area included the growth of citrus, other fruits, vegetables, and some root crops for consumption and for sale.

Agriculture is the second highest income-earner for the Roseau Valley's residents after tourism. However, in 2017 farmers were increasingly turning towards tourism which was considered more profitable.

Some villages in the valley were involved in commercial farming in 2017:

- Morne Prosper: mainly vegetables (the land is relatively flat).
- Wotten Waven: more diverse production of flowers, subsistence farming, tubers.
- Trafalgar: smaller-scale production more geared to tourism as well as tubers. There were also 2 small poultry farms.
- Laudat: tuber production, vegetables and subsistence farming.

In 2016 it was reported that there was a reduction in agriculture in most villages, especially Laudat and Trafalgar due to growth in tourism. In 2016, in the Roseau Valley, those working in agriculture are mainly women (in vegetable farming in Morne Prosper and Wotten Waven). Most farms were small production units comprising short-term and small-scale operations (¼ - 1 acre, or 1,000 – 4,000 m^2). Few farmers had larger lots of land, i.e. in excess of 5 acres, or just over 20,000 m^2.

Hurricane Maria caused substantial damage to agriculture in Dominica, including loss and damages to animals, crops, buildings, infrastructure and equipment. Damage to forest resources was also reported, with further impacts to agriculture. The greatest economic sector losses were sustained in the agriculture sector (32 percent), followed by the tourism (19 percent) and transport sectors (14 percent).[4] It is probable that income from agriculture in the Roseau Valley has been significantly impacted.

3.6 Educational Profile

National school enrolment rates are quite high in Dominica at 97.5% for 5-9 year olds and 98.3% for 10-14 year olds (The Caribbean Development Bank, 2010). According to the Ministry of Education, in 2014, 75 pupils from the Roseau Valley were attending primary school. Approximately 224 students from the Roseau Valley were in Secondary School in 2014. Every village in the Roseau Valley has its own primary school, but pupils must travel to Roseau once they reach secondary school age. This can represent a significant cost for parents, especially for transport. Laudat primary school has been merged with the Trafalgar primary school – effective end of the 2016-2017 school year (July 2017).

3.7 Health Profile

Life expectancy in Dominica is 77 years (81 for women and 74 for men). The death rate in Dominica is relatively low, 8.1-9.5 per 1000 live births between 2010 and 2015. The infant mortality rate was 20.8 per 1000 live births in 2015. According to 2017 data from the Ministry of Health, 5.5-6% of births in the country were born to residents of the Roseau Valley in 2015-2016. Chronic illnesses recorded in the Roseau Valley in 2015 included cancer, pneumonia, pregnancy related illness, hypertension, heart disease, motor neuron disease, birth defect, and diseases of the urinary system. Incidences of each were between 1-2 people. Malaria is not typically present in Dominica, but Chikungunya and Dengue fever are health concerns. At least 30 cases of Zika virus were confirmed in Dominica in 2016. According to the CIA Factbook, in 2014 5.5% of GDP was spent on health (Central Intelligence Agency World Factbook Website (2017).

There are three health centres in the Roseau Valley one in each of the potentially affected communities (Trafalgar, Wotten Waven and Laudat). The Valley is also close to the capital of Roseau and its health facilities including the Princess Margaret Hospital, which is the country's top health care establishment. The hospital has

[4] WBG Post-Disaster Needs Assessment, Hurricane Maria, September 18, 2017 completed November 7, 2017.

224 beds (including 56 in a psychiatric unit) and was recently expanded per the Caraïbes Environnement Développement & Coll, May 2015 Report on the initial environmental status of the Roseau Valley in Dominica.

Damage and losses to healthcare facilities post Maria were estimated at EC$ 48.3M (US$ 17.85M). The Princess Margaret Hospital, Roseau, the only referral hospital in the health care system, sustained severe damage with 15 percent of its buildings totally destroyed leaving only 53 percent functional. Central medical stores lost the majority of medical supplies due to water damage but most medications were spared. Bed capacity was decreased by 95 beds.

3.8 Vulnerability

In 2016 the social survey respondents, focus groups and wider community expressed that there were no specific vulnerable groups in the Roseau Valley. However, during project consultation, disabled members of the community were observed including an amputee, blind, and deaf members of the community who were without support services. Disabled members of the community would be considered vulnerable. Elderly members of the community that could be isolated and widows would also be considered vulnerable. In addition, residents of the Roseau Valley that have been unemployed for a significant length of time (2 years or more) could also be considered vulnerable.

Post Hurricane Maria, new vulnerable groups are emerging. Surveys in the project affected communities suggest that 90% of the respondents have lost the roofs of their houses, and 95% of the respondents have lost their livelihoods[5] .Among the non- salaried economically active population, 3.1 million work days were lost post-Maria. The respective loss in work days and income resulting from Hurricane Maria, is likely to result in a 25 percent decline in consumption, which could translate into an increased poverty rate of 36.2 percent (from 28.9% as reported in 2009). This may, in turn, have the undesirable effect of increasing income inequality, which researchers argue could lead to an increase in violence and crime. Those community members previously considered vulnerable e.g. elderly or disable, maybe have been adversely affected by the Hurricane and the damage it has caused, further increasing their vulnerability.

3.9 Detailed Socio-Economic Surveys

Initial face-to-face interviews and phone discussions were held in March 2018 with the PAPs to collect census level information and verify physical assets. Face-to-face interviews included completion of a census survey questionnaire and phone interviews, which were conducted to collect more limited data, consisted of approximately ten basic questions. All but four of the parties were able to complete the full census survey. Additionally, seven other potentially affected property owners in the project vicinity were interviewed, however, this data is not reported below as these parties were determined not to be directly affected by the Project at this time. Additional census data was collected during June and July of 2018 to get a complete picture of PAP socio-economic conditions. Findings relating to the PAPs are summarized below. Photographs of the PAPs properties and some additional data is provided in Appendix B.

It is important to note that certain circumstances, particularly cultural reticence to share income and livelihood information, may have influenced the responses to the socio-economic surveys.

Survey responses directly relevant to the ARAP process are summarised as follows:

- A total of approximately 40 people were identified when all members of the affected PAP households were tallied.
- The surveyed PAPs were generally aged 40 to 60. Three of the PAPs are elderly. Approximately half are single and a half married. Half are women and half men. Households generally consist of 3-4 people.
- Four of the PAPs are supporting elderly parents and approximately half of the PAPs are also supporting teenage or older children and siblings.

[5] WBG Post-Disaster Needs Assessment, Hurricane Maria, September 18, 2017 completed November 7, 2017.

- A number of the PAPs presently live overseas and therefore, did not fill in the survey in full and provided limited information. Some own other land or property in the area. Some were farmers, vendors or small business traders, a [redacted] stay at home parents, unemployed or construction workers.
- Most of the PAPs experienced some adverse effects from Hurricane Maria including structural damage, income loss, or need for government food rations.
- Most of the PAPs are elementary school graduates, some have high school degrees and one or two have college degrees. All own their respective properties. One PAP is a tenant farmer without a formal lease.
- Average household monthly income is approximately $EC 3,000 (approximately USD 1100-). Many of the PAPs indicated that they are supporting other family members. Most of the PAPs have other working members in their households, which may reduce their vulnerability. Most of the PAPs indicated that they are responsible for spending of household finances.
- All of the PAPs are aware of the proposed Project.
- Only one of the PAPs currently resides in the affected structures.

The following .

Table 3-1 presents additional data on the PAPs.

Table 3-1 PAP Socioeconomic Census Data

Number	Type of Business	Gender	Age	Primary Occupation	Marital Status	Duration of Business	Household Members	Highest level of education
PAP1	Farming	Male	64	Self-employed farmer	Married	3 years	4	Secondary School
PAP2	Construction	Male	46	Construction (living and working in the U.S.)	Single	5 years	5	College
PAP3	Farming and Construction	Male	59	Agriculture/ Construction	Single	28 years	1	Primary School
PAP4	Homemaker	Female	46	Homemaker (Living in Germany)	Single	18	5	College
PAP5	[redacted]	Female	54	[redacted]	Single	16	4	Post-graduate, Masters Level
PAP6	N/A	Male		Living & Working in French Territories	Married	Unknown	4	Vocational Certificate
PAP7	Retired – on social security	Male	83	Retired	Married	N/A	3	Elementary
PAP8	Tourism – out of business	Female	N/A	N/A	N/A	N/A	N/A	N/A
PAP9		Female	60	Living & Working in St.Thomas	Single	N/A	N/A	Post-Secondary
PAP10	Retired	Male	Over 80	Living in Canada (over 30 years)	Married	N/A	2	Post-Secondary

[redacted]

Number	Type of Business	Gender	Age	Primary Occupation	Marital Status	Duration of Business	Household Members	Highest level of education
PAP11	Farming and business	Male		Businessman	Single	15 years	2- single parent	College
PAP12	N/A	Female		Business Person	Married			
PAP13	N/A	N/A	Deceased	N/A	N/A	N/A	N/A	N/A
PAP14	Farming	Male	54	Farmer	Single	34 years	1	Primary

4. Identification of Project Impacts

4.1 Land Acquisition, Physical Displacement and Resettlement Impacts

For construction of the power plant, reinjection route and associated infrastructure, seven full properties at the power plant and a portion of six other properties along the reinjection line would need to be acquired. This would include three structures, one of which is classified as residential, one intended for residential use and one used for livestock (refer to Section 6 for further details). Only one structure is currently housing a PAP. These properties would be directly displaced by the Project footprint. This ARAP therefore considers 13 properties in total.

The six properties impacted by the construction of the reinjection route would only require acquisition of a portion of the property to accommodate a 10 m wide corridor. Table 4.1 below illustrates the percentage of each property required for acquisition for the reinjection line route. As the percentages required for each property are generally small, there is still an opportunity to minimise resettlement/livelihood impacts during the design phase by placing the reinjection line route in the areas of least impact within each property, or to avoid dividing a piece of land in two. Land (1.06 acres) has already been acquired from PAP 12 for the drilling phase. Approximately 6 acres of land will be further acquired by the project from PAP 12. Table 4-1 presents the estimated percentage of land to be acquired for the reinjection line, per PAP.

Table 4-1: Estimated % of Land Acquired for Reinjection Line Route

Reinjection Line Affected Party No. (PAPs 1-7 are affected by the Power Plant)	Estimated % of Land Acquired for Reinjection Line Route (based on 10 m wide corridor)
PAP 8	2.32%
PAP 9	4.58%
PAP 10	1.74%
PAP 11	4.59%
PAP 12	3.79%
PAP 13	2.52%

Relocation to other sites was considered as part of the ARAP process, particularly by two affected parties, but all but one of the affected parties opted for compensation. The costs and benefits of replacement land versus compensation were explained to the relevant parties. In the long-term, impacts are expected to decrease further as affected people realise some of the benefits of compensation, relocation and livelihood restoration initiatives, and as the other mitigation and monitoring measures are implemented along with community development initiatives. A map of Project affected plots is shown below in Figure 4.1 and Figure 4.2.

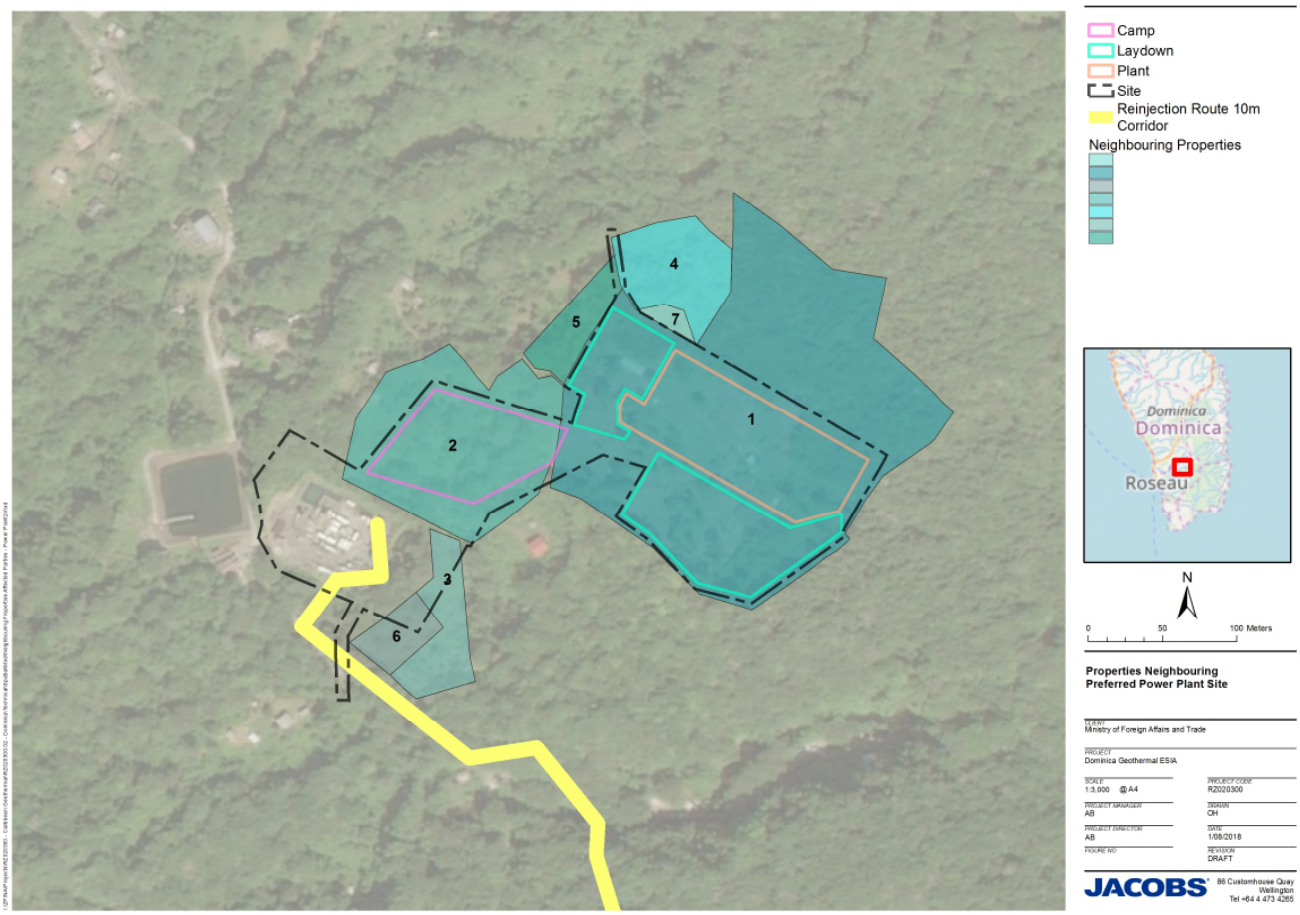

Figure 4.1: Properties Neighbouring Power Plant Site

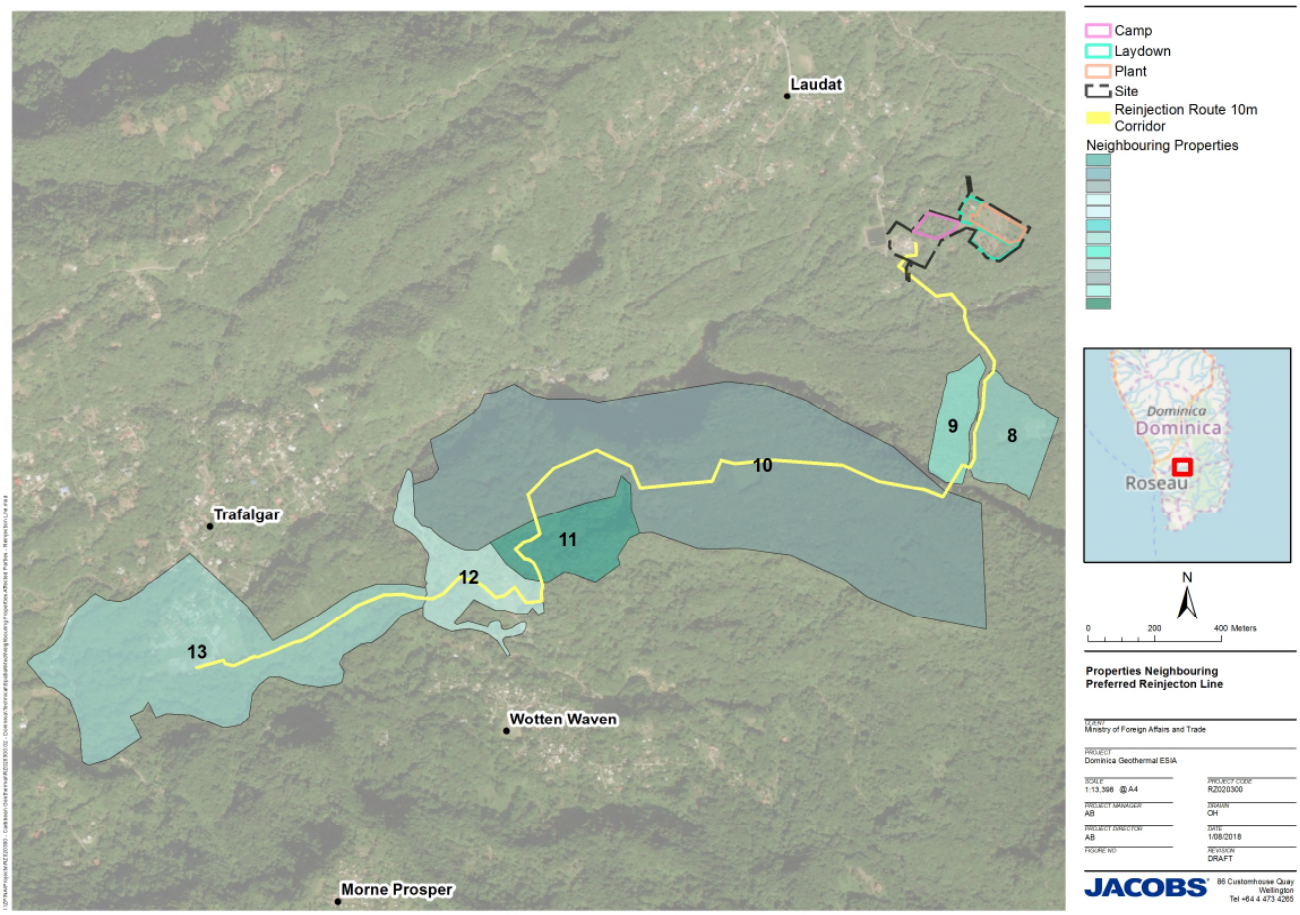

Figure 4.2: Properties Neighbouring Preferred Reinjection Line

4.2 Economic Displacement and Livelihood Impacts

Along with experiencing physical displacement, some of the parties affected by resettlement for the proposed power plant site and the reinjection pipeline route will experience economic displacement effects as the affected properties include agricultural crops, livestock, and trees. In particular, surveys show that five of the directly affected parties for the power plant site and one tenant on the pipeline route are presently engaged in agricultural activities, growing citrus and other fruits and vegetables, raising rabbits and sheep on their property. Additionally, two of the parties have agricultural structures that would be affected by the project.

4.3 Ecosystem Services

The Project would also potentially impact ecosystem services in the Project area. The key ecosystem services which have the potential to be significantly affected by the Project are the ecotourism resources including thermal spas, medicinal plants, handicrafts, and water related resources. However, many of these resources were severely damaged in the hurricane. Additional on- site surveys would be required to determine with certainty the extent of the ecosystem services impacts, but given the hurricane damage and given that the re-injection route terrain is difficult to access, the likelihood of unique ecosystem services being affected is considered low.

5. Eligibility and Entitlement

5.1 Overview

In the context of this ARAP, 'entitlement' is a concept through which we determine the amount and type of compensation (or other support) to be provided to a PAP for a particular impact or loss category. The process begins by linking an array of affected assets and economic activities to an affected interest or legal right, then to a potentially affected party who is deemed 'eligible' or not according to specific conditions. If qualified, the affected party is then a candidate and considered 'entitled' to an appropriate compensation package. An entitlement matrix then identifies the category of affected PAPs along with their entitlement to the various forms of support. In this instance, the affected assets are considered to be crops, structures, properties and economic activity (farming)

5.2 Eligibility and Cut-Off Date

In order to identify persons who will genuinely be displaced by the Project and who are eligible for compensation and assistance and differentiate from ineligible persons (such as opportunistic parties hoping to claim benefits), a cut-off date has been established. After the cut-off date, it is considered that the affected parties and wider public have been appropriately informed not to make improvements to, or settle on, the identified project land. Under the requirements of OP 4.12, the Project is not required to compensate encroachers after this date. The cut-off date for this Project has been established as 31 July 2018. This is the date that the detailed socio-economic survey in the community was completed for the majority of the affected parties and whereby the final number of farmers on the site was confirmed. Any additional persons establishing farming plots or other activities on the site after the cut-off date will not be considered as PAPs and will not be eligible for compensation. Because the potentially affected community is small (14 total), the cut-off date was communicated directly to the community during meetings and one-on-one interviews.

5.3 Entitlement Matrix for Compensation

The entitlement matrix presented below in Table 5.1 captures all PAPs, the characteristics of the impact, and the types of compensation/measures to be applied. PAPs will be entitled to a combination of compensation measures, relocation and livelihood assistance, depending on the nature and extent of the impact and lost assets, as detailed in Tables 6-1 to 6-3, and their preferences. Social and economic vulnerability will be considered in determining the level of assistance provided (as discussed in Section 5.4).

Compensation and assistance will broadly consist of one or more of the following types:

1) Compensation for loss of land;
2) Compensation for the loss of trees or crops;
3) Compensation for the loss of structures;
4) Transitional financial assistance to support any movement of structures or crops;
5) Income restoration for the loss of a business or significant agricultural loss;
6) Livelihood restoration assistance; and
7) Additional support for identified vulnerability.

A principle of this ARAP is that affected party livelihoods will be restored to pre-project standards and, if possible, improved. PAPs determined to be entitled to replacement land were offered that option. Details of the PAPs entitled to some form of compensation are described in Section 6. The nature of the compensation proposed following assessment of entitlement and eligibility is provided in Section 6, Valuation and Compensation.

Table 5-1: Entitlement Matrix

PAP Category	Type of Loss	Eligibility Criteria	Entitlement	Details of Support/Compensation
Power Plant and Reinjection Route Landowners (where more than 20 percent of land needs to be acquired for the Project)	Permanent loss of land	Land title or other document establishing ownership in case of unregistered land to affected property.	Compensation at replacement cost[6] Valuations done using market value (considerations detailed in text following matrix) plus all transaction costs and statutory fees.	Appropriate price/compensation as mutually agreed with the land owners. The value agreed will be based upon the individual valuations completed by the Dominica Lands and Surveys Division, consistent with the methodology outlined in the basis of compensation letter completed by DGDC for the ARAP included in Appendix A.
Power Plant and Reinjection Route owners or land users	Permanent loss of trees and crops	Permanently growing crops or trees on affected property for at least one year prior to property acquisition, including pre-hurricane Maria.	Financial compensation for crops/trees. Valuations done using combination of cost of production, selling price at time of valuation and future bearing capacity.	Cash compensation for the loss of trees, crops, perennials based on estimated crop values from the WB April 2018 Post Disaster Needs Assessment.
Power Plant and Reinjection Route owners or occupants	Permanent loss of a residential structure	Permanently residing on the affected property prior to property acquisition, including pre-hurricane Maria.	Compensation for lost assets. Structure will be valued by the PVU and compensation paid to the owner of the structure. Moving/transitional assistance	Appropriate price/compensation as mutually agreed with the land owners based upon Government valuation asset values. Moving assistance in lump sum payment.
Power Plant and Reinjection Route owners or land users	Permanent loss of an agricultural structure	Commercial structure present on the affected property prior to property acquisition.	Compensation for lost assets. Structure will be valued by the PVU and compensation paid to the owner of the structure. Moving/transitional assistance.	Appropriate price/compensation as mutually agreed with the land owners based upon Government valuation asset values. Moving assistance in lump sum payment.
Land owners with loss of income due to loss of land use	Loss of income	Farmers or business owners operating on affected property for at least one year prior to property acquisition, including pre-hurricane Maria.	Assistance for livelihood restoration. Provide access to existing social programmes: 1.Elderly pension and health care services 2.Skills training programmes	Loss of income compensation will be provided based upon a percentage of income loss experienced by the affected party.
Vulnerable households including households headed by women, elderly, very poor, disabled, or those affected or displaced by the effects of Hurricane Maria	Loss experienced by vulnerable parties	Qualifies under one of the above eligible criteria and is considered 'vulnerable' including widows, sole income source in the household, elderly.	Additional assistance to households for 3% of their annual income according to vulnerability levels.	Supplemental compensation for loss of annual income. Priority for community enhancements including health and education components. Priority for livelihood and agriculture restoration components. Priority for suitable employment and transport to nearby shopping if needed.

[6] Replacement cost means that the affected person can replace the affected asset to the same condition. Replacement cost typically reflects market value plus transaction costs, transfer or retitling fees, and salvageable materials.

5.4 Vulnerable Parties and Gender Considerations

Vulnerable parties are often at a disadvantage to participate and benefit from social and economic opportunities in their communities or need special assistance to do so. Women have important economic roles and engage in a very wide range of income making activities in the agricultural and marketing sector. The ARAP pays particular attention to ensuring that vulnerable people and women are the recipients of compensation pertaining to and reflecting their full activities. As a result, women and vulnerable people have been encouraged to actively participate in all Project-related resettlement consultations and negotiations and certain meetings have been conducted with women's groups. Special mitigation actions / measures for vulnerable people / women have been prepared and included in the ARAP (Section 7). All compensation due to woman-headed families will be given directly to the woman family head. ARAP monitoring and evaluation will pay special attention on the impact of resettlement on women and other vulnerable people. Assistance to vulnerable parties is discussed further in Section 7.2.

6. Valuation and Compensation

6.1 Assessment of Land Value

The valuation methodology for the land compensation presented below was based on initial valuations by the provided by the Department of Lands and Surveys in July 2018 for some of the properties and estimates by DGDC based upon reference to other land valuations completed by the Department of Lands for the properties in the same area in 2017. The landowners were notified that their properties could be required for the project. Owners, or their representatives, of five of the seven properties under consideration for the power plant were present when the land surveys were carried out. The compensation rates to be proposed to the landowners were developed considering compensation based upon replacement value, as required by OP4.12, which includes; the market value of the land, transactional costs (legal fees associated with the process of selling and buying of land on average 10.5 % of market value), and any other fees associated with time delays as enshrined in the laws of Dominica. In ascertaining the market value of land, the property valuation unit of the Ministry of Housing and Lands relies on the individuality of each property. Physical inspection of the sites are carried out and factors such as services, access, topography, land use, size and market demand are taken into consideration. As noted below, Parties 4, 5 and 7 are included in the ARAP and valuation estimates, but properties not directly required for the Project. They are included in the plan due to potential noise, visual and construction impacts. Formal property evaluations and negotiations will be completed by the GoCD, Department of Lands and Surveys, prior to construction. Affected parties shall be properly consulted in line with OP 4.12 prior to any land acquisition. An estimate of relevant property values is provided in .

Table 6-1: Assessment of Property Values

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Table 6-1: Assessment of Property Values

Affected Party No.	Affected Area Project Component	Land area	Total Land Compensation*
1	Power plant site	439,520 ft^2	Replacement value: EC$ 378,500 USD 140,185
2	Power plant site	158,994 ft^2	Replacement value: EC$ 255,500 USD 94,629
3[7]	Power plant	32,670 ft^2	Replacement value: EC$ 163,350 USD 60,500
4[8]	Power plant	45,128 ft^2	Replacement value: EC$ 135,384 USD 50,142
5[8]	Power plant	23,087 ft^2	Replacement value: EC$ 69,260 USD 25,652
6	Power Plant	17,688 ft^2	Replacement value: EC$ 88,440 USD 32,755

[7] Owner has also expressed to DGDC that if power plant is constructed they wish DGDC to purchase as they do not wish to live next to the power plant.
[8] Property not required for the Project, but included in the plan due to potential noise, visual and construction impacts, and possibility that owner's may wish to move if power plant is constructed.

Affected Party No.	Affected Area Project Component	Land area	Total Land Compensation*
7[8]	Power Plant	4,797 ft^2	Replacement value: EC$ 9,594 USD 3,553
8	Pipeline route	1,619,561 ft^2 land required based on 10m wide corridor approx. 1,147 ft long: 37,620 ft^2	Replacement value (based on 10m wide corridor): EC$ 150,480 USD 55,733
9	Pipeline route	432,115 ft^2 land required based on 10m wide corridor approx. 604 ft long: 19,800 ft^2	Replacement value (based on 10m wide corridor): EC$ 59,400 USD 22,000
10	Pipeline route	8,537,760 ft^2 land required based on 10 m wide corridor approx. 4530 ft long: 148,500 ft^2	Replacement value (based on 10m wide corridor): EC$ 148,500 (wants to lease the land) USD 55,000
11	Pipeline route	646,648 ft^2 land required based on 10 m wide corridor approx. 900 ft long: 29,700 ft^2	Replacement value (based on 10m wide corridor): EC$ 29,700 USD 11,000
12	Pipeline route	Two properties 1). 288,324 ft^2total area with 242,150 ft^2 required for reinjection line in addition to 1.06 acres already acquired for well pad, and 2). 261,229 ft^2 total area and 9,900 ft^2 to be acquired for well pad	Replacement value: EC$ 756,150 USD 280,056
13	Pipeline route	3,008,079 ft^2 land required based on 10 m wide corridor approx. 2310 ft long: 75,900 ft^2	Replacement value (based on 10m wide corridor): EC$ 189,750 USD 69,575

Source: Government Valuations completed in July 2018 and DGDC Estimates.
*USD Conversion Rates based upon exchange rate of 1 ECD =0.37 USD as of Oct, 2018.

6.2 Assessment of Crops/Trees/Livestock Compensation Values

Six identified PAPs will lose assets in the form of their crops. The values presented in **Error! Reference source not found.** are an estimate of current market value for the crops based on World Bank crop loss data set developed as part of the Post Disaster Needs Assessment after Maria in 2018 presented in $EC (East Caribbean dollars) and United States Dollars (USD) equivalent. Total compensation identified below in Table 6-1 also includes loss of income. The Ministry of Agriculture & Fisheries will carry out valuations of affected crops and determine the actual compensation payment. Valuations are completed by extension officers of the Ministry of Agriculture & Fisheries who have intimate knowledge and understanding of the holdings. Crops are valued using the following bases;

- Cost of Production if farm records exist
- Market value (selling prices) at time of valuation if no records exist

- Bearing capacity for well-established farms

Crop valuation falls under the purview of the Ministry of Agriculture & Fisheries. The values assigned to crops are specified as a range and are set by a committee of technical experts who take into consideration factors such as the species, location, production cost, market value, climate and environmental influences. The applicable range for each crop is documented in the Ministry's "Crop Valuation Guide", and a comprehensive list of crops and economic trees under the following broad categories;

- Fruit and tree crops
- Vegetables and herbs
- Cut flower and ornamental plants
- Food and root crops

Where crops are being valued for displacement from the land or removal of the crop, the economic life of the crop is considered (particularly for tree crops). When a valuation is required for an assessment of damage to the crop, where the crop continues to grow but growth is retarded, the age at the time of damage is considered. The aforementioned provisions are generally in keeping with World Bank policy.

Contrary to local practice, however, OP 4.12 notes that in some countries, the value of the harvest is determined by the average market value of crops for the previous three years. It states further that whatever the multiplier, if food supplies are sold in the area enough cash compensation is paid to purchase equivalent supplies, taking into account the possibility of price increases caused by heightened demand from displaced persons.

Table 6-1 Crop/Tree/Livestock Values

Affected Party No.	Area of affected Crops/Livestock/Trees	Crops/Livestock/Tree Values EC[9]	Total Compensation*
1	70 Rabbits 6 sheep	Both sheep and rabbits to be moved Moving costs estimated at EC$ 1000	EC$ 1,000 USD 370
2	150 Grapefruit Trees 10 Orange Trees 20 Coffee Plants	EC$ 21,730 EC$ 1,449 EC$ 1,670	EC$ 24,849 USD 9,111
3	Trees/Crops: 8 Orange 5 Lime 8 Lemon 8 Westinsian Lime 4 Grapefruit 8 Tangerine 2 Soursop 4 Coconut 2 Sugar Apple 8 Coffee 4 Valencia Orange 4 Atomic Orange	EC: $1,159 $655 $697 $909 $349 $601 $155 $1,048 $81 $668 $579 $579	EC$ 7,479 USD 2,742
6	Trees/Crops: 6 Orange 6 Grapefruit	EC: $869 $523	EC$ 2,004 USD 735

[9] Formula for valuation = acreage x years to re-establish crop/tree x typical production per acre x unit value for loss of production + number of crops trees x value to replace crop/tree.

Affected Party No.	Area of affected Crops/Livestock/Trees	Crops/Livestock/Tree Values EC[9]	Total Compensation*
	1 Sugar Apple 1 Guava 2 Coconut	$41 $47 $524	
7	Trees/Crops: 31 Orange 3 Coffee 2 Grapefruit	EC: $4,491 $250 $174	EC$ 4,916 USD 1,802
14	Trees/Crops: 8 Coconuts - bearing fruit 45 Coconuts - young, not bearing 26 Bananas 10 Avocado 22 Cocoa 20 Sugar Cane 10 Pawpaw 56 Pineapple 3 Tangerine 1 Passionfruit 6 Breadfruit 15 Citrus 1 Cinnamon 200 Dasheen	EC: $2,096 $1,584 $1,950 $1,932 $16,770 $2,574 $1,059 $3,051 $225 $78 $292 $2,173 $5 $250	EC$ 34,040 USD 12,481

Source: DGDC April 2018 communication and WB crop rates as used in the Maria PDNA.
*USD Conversion Rates based upon exchange rate of 1 ECD =0.37USD as of Oct, 2018.

Figure 6.1: Photograph of Affected Rabbit Hutch

6.3 Assessment of Assets, Residential and other Structures

Three identified PAPs will lose assets in the form of established structures. Determination of the compensation value for the structure was established based upon valuations provided by the Department of Lands and

Surveys in July 2018. Compensation for residential and other structures is based on this calculation by the Department of Lands and Surveys. Formal negotiation on these values will take place with the Department of Lands and Surveys in the near future. Photographs of Affected Structures are included in Appendix B.

Table 6-2 Structural Valuations

Affected Party No.	Sq footage of Affected structure	Total Compensation*
1	Potential Residential House/Currently livestock dwelling – 1,017 ft^2 Rabbit Hutch - 308 ft^2	EC$ 40,000 USD 14,814
2	Residential House - 418 ft^2	EC$ 62,700 USD 23,222
3	Residential House - 144 ft^2 Shed -160 ft^2	EC$ 25,000 USD 9,259

Source: Government Valuations completed July 2018 *USD Conversion Rates based upon exchange rate of 1 ECD =0.37USD as of Oct, 2018.

6.4 Compensation Payment Procedure

Formal property evaluations for all of the affected properties will be completed by the GoCD Department of Lands and Surveys prior to construction followed by negotiations with the affected parties. On the basis of these negotiations, and completion of internal processes, the Ministry of Housing & Lands will disburse compensation to the affected parties. Prior to disbursement of compensation, each eligible PAP will sign a compensation certificate which sets out the mutual commitments for each party. The format of the certificates will be easily understandable to affected people. This will be countersigned by the Ministry of Housing & Lands and representatives of DGDC will be present for this process.

Following agreement and signing of the certificates, compensation will be disbursed as indicated, livelihood restoration activities will commence and the PAPs will be requested to vacate the site. DGDC will, in collaboration with the Division of Lands and Survey, be responsible for reporting on the receipt of the financial compensation of the PAPs and will arrange in kind compensation for any follow-up training.

In certain cases, it may not be feasible to pay compensation to all parties before taking possession of the land, for example when the ownership of the land in question is in dispute. There may also be cases where the landowner is out of the country. Under such circumstances, compensation funds shall be made available for each party through deposit into an escrow account.

6.5 Livelihood Restoration and Enhancement Measures

The benefits of livelihood restoration measures were highlighted to the PAPs during consultation, such as the potential for long term income generation, and diversification of options for themselves and their families, in contrast with cash compensation which can often be quickly consumed. Most PAPs expressed a preference for cash compensation only. However, additional measures were considered such as counselling in family health matters, business and financial management support, and post-hurricane support.

7. Vulnerability Assistance

Vulnerable people can be defined as, those below the poverty line, the landless, the elderly, disabled, women and children, indigenous peoples, ethnic minorities, or other displaced persons who may not be protected through national land compensation legislation (World Bank, OP 4.12).

Key factors which could be considered indicators of vulnerability for the identified PAPs include:

- Many in the communities impacted have reported that they have lost the roofs of their homes due to Hurricane Maria;
- Many in the affected communities reported that they have lost their livelihoods as a result of Hurricane Maria;
- Some of the PAPs are unemployed, low-income or single party headed households; and
- Some PAPs are elderly community members or disabled parties.

The ARAP process has considered the potential for impacts on vulnerable PAPs and findings indicate that additional support should be applied to the PAPs as several would be considered vulnerable. Table 7-1 presents a vulnerability matrix for the PAPs.

Table 7-1 Vulnerability Matrix

PAP No.	Sole earner in household	Elderly or Disabled	Unemployed, low income	Receipt of Government Support Programs	Home or livelihood damaged by hurricane	Considered vulnerable
1	No	No	Yes- unemployed	Yes	Yes	Yes
2	Yes	Yes	Members of household unemployed post-Maria	No	No	Yes
3	Yes	No	No	No	Yes	No
4	Unknown	No	Unknown	Social support in Germany	Yes	Unknown
5	No	No	No	Yes	No	No
6	No	No	Living Overseas	No	No	No
7	No members currently working	Yes	Yes, on social security	Yes, social security	Yes	Yes
8	Business	N/A	N/A	N/A	N/A	No
9	Living Overseas	No	No	No	No	No
10	No	Yes	No	No	No	No
11	No	No	No	No	Yes	No
12	No	No	No	No	Yes	No
13	Deceased	Deceased	Deceased	Deceased	Deceased	No
14	Yes	No	Yes	No	Yes	Yes

Notes: N/A as this is a commercial business.

7.1 Forms of Assistance

Three of the PAPs are unemployed or low-income, three are sole earners in their households and three are elderly or are supporting elderly family members and seven experienced significant loss after Hurricane Maria. In total, four of the PAPs would be considered vulnerable. As such, the ARAP provides an additional safety net for vulnerable households. Project-affected households and land owners that are vulnerable could potentially experience severe hardship during the livelihood restoration process and as such monitoring of these parties will be particularly important. Regular visits to each PAP will be conducted to ensure that the PAPs retain their place to live, means of income, access to medical care, and access to food and welfare of vulnerable persons, in this case all of the PAPs will be specifically tracked and reported upon by the DGDC. Further detail on Project roles and responsibilities in included in Section 10.

7.2 Compensation for Vulnerable PAPs

Compensation due to vulnerable PAPs will comprise:

- Cash payment for the supplemental compensation consisting of 3% of the PAPs typical annual income for a year by the DGDC

Additional assistance may take the following forms, depending upon vulnerable persons' requests and needs:

- Assistance in employment training, access to and provision of healthcare, and educational support;
- Assistance in the compensation payment procedure (e.g. specifically explain the process and procedures, make sure that documents are well understood);
- Assistance in the post-payment period to secure the compensation money and reduce risks of misuse/robbery; and
- Counselling in domestic matters such as family, health, or finances.

8. Stakeholder Engagement

8.1 Introduction

In the context of resettlement and economic displacement, stakeholder engagement serves as both an opportunity for information exchange for consultation purposes and as a collaborative form of decision-making and participation. Full details of the stakeholders consulted during each stage of the ESIA process, and the detailed outcomes and observations are provided within the ESIA and Project Stakeholder Engagement Plan (SEP) and are not repeated in this ARAP.

The main objectives of consultation undertaken to date for the Project include:

- To provide information about the Project and its potential impacts to those interested in or affected by the Project, and solicit their opinion to that regard;
- To understand and address stakeholder concerns and expectations of the Project;
- To manage any unrealistic expectations and address misconceptions regarding the Project;
- To ensure participation and acceptance of the Project throughout the lifetime of the project by the key stakeholders including the community;
- To provide avenues to address any stakeholder grievances regarding the Project; and
- To agree on the asset valuation / compensation and livelihood restoration measures associated with this ARAP process and discuss potential concerns.

8.2 Consultation with the Affected Community

During the geothermal drilling phase, eleven general public meetings were held in the potentially affected communities in November and December 2013 and January 2014. Five were held in Laudat, three in Trafalgar and three in Wotten Waven. A visit to the current geothermal power plant in Guadeloupe was also conducted in 2012 with members of the community to experience first -hand the workings of an operational plant. Additionally, school visits were conducted in February and March 2012 from the Wotten Waven Primary School, Trafalgar Primary School, Morne Prosper Primary School, Laudat Primary School, and Laudat Primary School where students and staff toured the drilling sites. In addition to the recent public engagement, the Grievance Mechanism was socialised within the community during the 2017 social baseline survey process.

During the current Project development phase, a town hall meeting was held in Trafalgar in December 2016 with approximately 40 in attendance to discuss the current project and ESIA. Another town hall meeting was held in Laudat in July 2017 with 43 in attendance. A third town hall meeting was held in Wotten Waven in August 2017. A final townhall meeting will be held to present the findings of the ESIA in May or June 2018. In order to facilitate further understanding of community needs and conditions, focus group meetings were held in 2016, 2017 and 2018 in Wotten Waven, Trafalgar and Laudat, described in further detail below. Because the total population of the Project AOI is relatively small (approximately 1,600), and given that the general public and many of the focus groups and landowners that would be affected by the Project are the same parties, the four formal public meetings and 15 informal forums held on the Project were considered representative of the community.

A total of 15 focus group meetings were held as part of the ESIA baseline data collection. A meeting with six representative community leaders from all of the potentially affected communities was held in Trafalgar in November 2016 to discuss the Project and the most effective means of stakeholder engagement. Focus groups meetings were also held in June, July and August of 2017 including meetings with representatives of local hotels and resorts, handicraft vendors, hot springs businesses, and unemployed parties in the area. Groups consisted of 5-15 people and targeted questions were asked and recorded. In addition, 5 five focus group meetings were held in the communities in March 2018 following Hurricane Maria. These included meetings with community women in Laudat, Wotton Waven and Trafalgar, and vendor meetings in Wotton Waven and Trafalgar, to identify the impacts on the community of Hurricane Maria which hit Dominica in September 2017

and to understand how conditions in the Project area have changed since the ESIA baseline data was collected pre-Hurricane Maria.

8.3 Consultation on the ARAP

In accordance with the WBG policies ("Involuntary Resettlement Policy" and "Land Acquisition and Involuntary Resettlement" respectively), consultation on the ARAP included conducting a socio-economic census survey in 2017-2018; consultation with the project affected parties on the draft ARAP with relevant government institutions such as the Department of Lands & Surveys; and will include presentation of the findings of the draft ARAP to the affected communities. As noted, further survey work will be completed in Q4 to fully complete the census. Any comments on this Draft ARAP from the community or relevant institutions will be incorporated into a final ARAP. The ARAP will be updated as necessary with any new information from consultations with community or relevant institutions.

9. Resettlement Sites

In accordance with World Bank resettlement policies, resettlement sites were considered for two of the PAPs identified. One preferred site was identified on the basis of location, community continuity, access to productive resources, employment, and livelihood restoration consideration. The affected PAP wanted to remain local, on a site with land that would be productive for agriculture, and with easy access from local roads, on plots of a similar size to their previous property. A photograph of the preferred site for resettlement site is included below in Figure 9.1. The costs and benefits of replacement land were explained to both PAPs. However, although the pros and cons of replacement land were explained in detail to this party, one of the two PAPs has now indicated a preference toward compensation as they felt that they would prefer the cash and would be in a better position to negotiate a lower price for the land.

Figure 9.1 : Photograph of Resettlement Site 1

An additional PAP has expressed interest in a replacement property, but no specific site has been identified to date. Therefore, additional surveys will be required in Q4 2018 to identify possible resettlement site for this party. Details related to completion of this process are included in Section 10.3. All of the other 13 PAPs with affected property opted for cash compensation.

10. Roles and Responsibilities

10.1 Overview

The land acquisition process including negotiations and final compensation will be completed by the GoCD Department of Lands and Surveys including addressing any grievances related to land acquisition. DGDC will manage livelihood restoration related and resettlement (not including land acquisition) grievances consultation, grievance redress, monitoring and evaluation of the affected parties for this ARAP. DGDC has appointed a Community Liaison Officer (CLO) and Social Safeguards Specialist to support the ongoing community consultation and engagement process, both generally and specifically regarding this ARAP, and who will support in this process. The CLO role will continue into the operational phase. DGDC's parent Ministry, the Ministry of Trade, Energy & Employment requires MoUs with relevant Government institutions with which DGDC would need to coordinate for safeguards implementation, to facilitate DGDC's ability to carry out its oversight of all project-related safeguards. MOUs have been drafted and will be effected between the Ministry of Trade, Energy & Employment and the Ministries of; Housing & Lands, Agriculture and Fisheries and Health and Social Services to facilitate access of PAPs to livelihood restoration and resettlement entitlements and to manage grievances. The Ministry of Trade, Energy & Employment will delegate the responsibility for implementation, monitoring and reporting to the DGDC.

Key roles and responsibilities with regards to the ARAP are set out in Table 10-1.

Table 10-1: Roles and Responsibilities

Stakeholder	Interest	Roles/ Responsibilities	Timescale for Action
GoCD	Responsible for Land Acquisition Process	• Complete formal land valuation for each property • Complete compensation negotiations with each PAP • Disburse compensation to each PAP. • Manage acquisition of replacement properties as needed. • Ensure the receipt of the financial compensation of the parties. • For replacement property, ensure that once the property cost has been agreed, the property would then be transferred to them. • Manage grievances related to land acquisition.	Prior to construction (2-3 months)
PAP	Affected properties, structures and economic activity on site	• Engage with socio-economic surveys • Engage in consultation process • Vacate project site as agreed on compensation certificate.	Present-vacation of site (next 3 months)
DGDC	Project developer	• Engage appropriate organisations/individuals to implement the ARAP. • Facilitate good communications and relations with the PAPs • Manage livelihood restoration process and vulnerable party resettlement issues.	Present- ongoing

Stakeholder	Interest	Roles/ Responsibilities	Timescale for Action
		• Respond to livelihood restoration and resettlement (not including land acquisition) feedback and grievances in a timely manner.	
Social Safeguards Specialist	DGDC team	• Implement ARAP economic displacement • Provide liaison between DGDC and PAPs • Monitor ARAP, with particular attention to vulnerable persons • Identify and provide additional support as required.	Present-end of 2018
CLO	DGDC team	• Support Implementation of ARAP • Manage General Grievances • Responsible for general Project-related community consultation.	Present-ongoing throughout Project operations
Consultant (Jacobs)	Consultant	• Audit / supervise the process.	Present-end of 2018

10.2 Compensation Payment Procedure

Appendix C presents the basis of proposed compensation and plan for each PAP including livelihood restoration. Prior to disbursement of compensation and commencement of livelihood restoration measures, each eligible PAP will sign a compensation certificate which sets out the mutual commitments for each party. The format of the certificates will be easily understandable to the PAPs. This will be countersigned by GoCD Department of Lands and Surveys. This compensation plan includes commitments as follows:

- GoCD to pay the agreed compensation prior to the commencement of project construction and land clearance;
- PAP to vacate the affected land including harvesting crops prior construction; and
- Both parties to abide by the requirements of the ARAP.

Following agreement and signing of the certificates, compensation will be disbursed to the bank account of the owner of the property and resettlement and livelihood restoration activities will commence and the PAPs will be requested to vacate the site. The GoCD will be responsible for ensuring receipt of the financial compensation of the parties. Vacation of the site will be carried out by the PAP and monitored by DGDC.

10.3 Resettlement Procedure

Once a suitable resettlement site has been identified, the Department of Lands and Survey shall formally survey the property and negotiate with the PAP and upon agreement submit request for permission for its transfer. The Department of Lands and Surveys is only able to accommodate resettlement for properties/lands owned by the State. There is no provision for acquiring private property for transfer. This process includes commitments as follows:

- GoCD to transfer the property to the PAP prior to the commencement of project construction and land clearance, purchase, certification and transfer;
- PAP to vacate the affected parcel including harvesting crops prior construction; and
- Both parties to abide by the requirements of the ARAP.

10.4 Livelihood Restoration and Enhancement Measures

DGDC will support with the coordination of any transport or livelihood restoration support measures required by the PAPs during the physical relocation process. Resources of the GoCD will be utilised as required to support this process. Careful monitoring and evaluation will be required to manage the risk of unnecessary hardship, and to confirm that the various assistance activities are working as intended. The monitoring process is described in further detail in Section 12 of this document.

11. Grievance Management

11.1 Overview

A grievance can be defined as an actual or perceived problem arising from project-related activities that might give grounds for complaint. As a general policy, DGDC will work proactively towards preventing grievances through the implementation of impact mitigation measures as identified by the ESIA and through adherence to the steps identified in this ARAP. Through these activities DGDC and its advisors have endeavoured to anticipate and address potential issues before they become grievances.

Where unanticipated issues or failures in intended mitigation result in a complaint, a grievance mechanism is required to ensure that concerns are resolved promptly using an understandable and transparent consultative process. Most grievances can be settled with additional explanation efforts and some mediation. DGDC will employ the following grievance mechanism process to resolve any potential disputes related to the livelihood restoration process.

11.2 Potential Grievances/Disputes

Anyone from the community can submit a Project related grievance if they believe an activity or practice is having a detrimental impact on the community, the environment or their quality of life. They may also submit comments and suggestions. Grievances could include:

Unanticipated/mitigated negative impacts on a person or a community (e.g. financial loss, physical harm, nuisance);

- Dangers to health and safety or the environment;
- Failure of DGDC, its sub-contractors and their workers or drivers to comply with relevant standards or legal or other obligations including the requirements of the environmental permit or environmental and social management plan (ESMP);
- Harassment of any kind related to Project activities;
- Criminal activity;
- Improper conduct or unethical behaviour;
- Financial malpractice, impropriety or fraud; and,
- Attempts to conceal any of the above.

Specific grievances associated with implementation of an ARAP process may include:

- Insufficient notice to vacate the premises;
- Delay of payments;
- Problems with support arrangements; and
- Additional transition challenges.

General grievances will be investigated by the DGDC CLO to review the validity and responsibility. For general concerns, the CLO will explain in writing (or orally, where literacy is an issue) the manner in which the review was carried out, the results of the review, any changes to activities that will be undertaken to address the grievance, and how the issue is being managed to meet the relevant environmental and social management system and/or legal or other requirements. If the grievance cannot be resolved internally, DGDC will then seek to resolve the grievance through mediation by local authorities or appropriate government bodies, and finally, if a resolution cannot be reached, judicial appeal.

Land acquisition related grievances will be managed by the through the Department of Lands and Surveys as articulated in the Land Acquisition Act Chap 53:02 of the Laws of Dominica and reported through the DGDC for completeness. Any grievances related to livelihood restoration issues or any hardships experienced post

resettlement should be directed to the DGDC.A general grievance management flow chart is provided in Appendix A.

11.3 Confidentiality and Anonymity

The Project will aim to protect a person's confidentiality when requested and will guarantee anonymity in annual reporting. Individuals will be asked permission to disclose their identity. Investigations will be undertaken in a manner that is respectful of the aggrieved party and the principle of confidentiality. The aggrieved party will however be made aware of if/when a situation arises when disclosure of identity is required and the Project will identify these situations to see whether the aggrieved party wishes to continue with the investigation and resolution activities.

11.4 Grievance Reporting and Resolution

A formal logging system has been developed and the DGDC CLO will be responsible for logging all general Project related grievances. However, all grievances related to land acquisition will be handled directly by the Commissioner of Lands as designated by the Ministry of Housing and Lands. A comments sheet has been produced for those wanting to make a complaint or comment, and is available in the community and online on the website of the DGDC (www.geodominica.com)Provision will be made to do this directly to DGDC or the contractor, through the CLO or through a community representative (e.g. through the village leaders). The procedure for lodging grievances and their resolution will be included in appropriate project communication materials such as the non-technical summaries. In the first instance, grievances will be directed to the CLO who will classify grievance according to Table 11-1.

Table 11-1 : Grievance Classification Criteria

Grievance Classification	Risk Level	Validity	Response
Low	No or low	Unsubstantiated	CLO will conduct investigation, document findings and provide a response.
Medium	Possible risk and likely a one off event	Possible substantiation	CLO and an appropriate investigation team will conduct investigation and determine the corrective actions to be taken. The CLO will provide a formal response.
High	Probable risk and could reoccur	Probable substantiation	CLO will organise a Major Investigation Team including DGDC for prompt investigation and resolution. The CLO will provide a formal response.

The CLO will log the receipt of a comment, formally acknowledge it, track progress on its investigation and resolution, and respond in writing with feedback to the aggrieved party. They will initiate the investigation and ensure its speedy conclusion aiming to provide a response with ten working days, unless there are exceptional circumstances. If the project receives a large number of unsubstantiated grievances, the process will be reviewed to define instances when no response is needed.

Where investigations are required, Project staff and outside authorities as appropriate will assist with the process. The CLO will collaborate with DGDC to identify an appropriate investigation team with the correct skills to review the issue raised and to decide whether it is project related or whether it is more appropriately addressed by a relevant authority outside the Project.

The investigation will also aim to identify whether the incident leading to the grievance is a singular occurrence or likely to reoccur. Identifying and implementing activities, procedures, equipment and training to address and

prevent reoccurrence will be part of the investigation activities. In some cases, it will be appropriate for the CLO to follow up at a later date to see if the person or organisation is satisfied with the resolution or remedial actions.

The CLO will summarise grievances to report on project performance weekly during construction and bi-annually during operation, removing identification information to protect the confidentiality of the complainant and guaranteeing anonymity.

Contact information for the CLO is as follows:

Name	Allan Toussaint
Address	DGDC P.O. Box 1454, 18 Kennedy Avenue Roseau Commonwealth of Dominica
Email	allan.toussaint@geodominica.com
Telephone Number	767-448-6178/275-7392

11.4.1 Indicative Timescales for Dealing with Grievances

The following indicative timeframe is proposed for the grievance mechanism:

- Written acknowledgement of receipt of the grievance: within 7 days of receiving the grievance; and
- Proposed resolution: within 4 weeks of receiving the grievance.

12. Monitoring and Evaluation

12.1 Monitoring Objectives

Monitoring and evaluation are essential components of the ARAP process. The objective is to provide feedback and to identify problems and successes as early as possible to allow for timely adjustment to implementation arrangements as needed. Monitoring and evaluation activities need to be integrated into the overall Project management process and a comprehensive monitoring plan that identifies the organizational responsibilities, methodology, and the schedule for monitoring and reporting must be developed for the ARAP.

The monitoring and evaluation process includes the following objectives:

- Monitoring of specific situations or difficulties arising from the implementation of the ARAP or compliance with its objectives; and
- Evaluation of the mid- and long-term impacts of the ARAP on affected households' livelihood, environment, local capacities, on economic development and settlement.

Monitoring aims to correct implementation methods during the course of the Project, as required, while evaluation is intended at checking whether policies have been complied with and provides lessons learnt for amending strategies from a longer-term

12.2 Monitoring Indicators

Monitoring will address the following aspects:

- Socioeconomic monitoring: follow-up of the welfare/status of the PAPs including regular survey of current income and cost of living, re-establishment of property, residence and livelihoods and other economic activities;
- Grievances and grievance management system including any issues to be resolved; and
- Assistance in livelihood restoration including any unforeseen costs/challenges such as transport or other costs.

The monitoring and evaluation measures put in place are designed to ensure that the implementation of the ARAP is carried out in accordance with the relevant requirements of the WBG / IFC as well as national requirements.

Measuring progress and impacts related to the aspects described above would be based on the following indicators:

- Livelihoods would be measured through a quantitative income or expenditure survey;
- Use of capital will be reviewed via interviews and receipts to determine livelihood sustainability; and
- Qualitative indicators measuring perception and well-being of PAPs.

12.3 Monitoring Process

The DGDC Safeguards Specialist will undertake monitoring of the ARAP implementation. Bi-monthly progress reports will be prepared for up to two years. The monitoring will consider the timeline of the process, outcomes of compensation/livelihood restoration and any other impacts that occur as part of the process. The ARAP implementation schedule is shown in Table 12-1.

Table 12-1: ARAP Implementation Schedule

TASKS	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8
Completion of Draft ARAP								
Approval of Draft ARAP/Community Consultation								
Implementation of ARAP								
Payment of Compensation to PAPs								
DGDC Site Clearance								
Grievance Mechanisms and Procedures Implemented								
Construction Begins								
Performance Monitoring								
External Evaluations (up to two years)								

Monitoring will continue for up to two years and will focus on ensuring that the PAPs are not subject to undue hardship during the transition given that they are all considered to be vulnerable.

12.4 Evaluation Objectives

Evaluation is a key step to ensure that the ARAP process is being completed in line with WBG / IFC policies. The evaluation of the ARAP will have the following specific objectives:

- Assessment of the compliance of the implementation of resettlement, relocation and livelihood restoration activities with objectives and methods as set out in this ARAP;
- Assessment of the compliance of the implementation of the ARAP process with laws, regulations and safeguard policies as stated above;
- Assessment of compensation procedures as they have been implemented;
- Evaluation of the impact of the resettlement, relocation and livelihood restoration process on incomes and standard of living, with focus on the requirement that PAPs income are restored or improved; and
- Identification of actions to take to improve the positive impacts of the programme and mitigate its possible negative impacts, if any.

12.5 Evaluation Process

DGDC will use an independent consultant (Evaluator) to conduct an annual evaluation starting six months after implementation of the ARAP to evaluate compliance with objectives, procedures, policies, laws and regulations. The Evaluator will be an independent consultant with experience in the conduct of resettlement and livelihood

restoration planning. The Evaluator will be carefully chosen on the basis of hands on experience, no previous involvement in the Project, and proven ability to identify actions that improve implementation and mitigate negative impacts of economic displacement.

The ARAP implementation will be evaluated against a number of key performance criteria, which will be identified by the Evaluator and DGDC based on consultation conducted to date with the community. These criteria will likely include access to employment, income, food security livelihood restoration and enterprise, and health and nutrition. The grievance management system will also be evaluated for its effectiveness. This evaluation will also verify that compensation payments have been made as promised, have been properly processed, and recommendations are being implemented. The schedule for independent evaluation of ARAP implementation is six months following completion of ARAP implementation. The evaluation will be repeated each year for 2 years.

13. Budget and Schedule

It is essential that all costs be estimated carefully and included in the detailed ARAP budget. DGDC have itemized resettlement costs by categories of impact, additional entitlements and other resettlement expenditures including training, coordination, and monitoring. The results are presented in a tabular form below that illustrates expenditures over the life of the Project. Costs included are:

- Resettlement plan preparation consultancy;
- Cash compensation for land;
- Cash compensation for crops, trees, or livestock;
- Compensation for structures;
- Livelihood restoration measure costs;
- Conflict resolution; and
- Monitoring, evaluation and auditing costs.

The estimated ARAP budget is presented in Table 13-1. These costs are indicative and consultant fees will need to be verified.

Table 13-1: Estimated ARAP Budget

ITEM	Description	COST USD*
1	Land Acquisition Compensation	900,780
2	Structural Compensation	47,295
3	Tree/Crop Compensation	27,241
4	Vulnerable Assistance (1 year)	10,000[10]
Sub-total		***985,316***
5	Program Development, Management and Grievances	2,000
6	Community Consultation and Engagement	4,000
8	External Evaluation	10,000 (2 years)
Sub-total		***16,000***
TOTAL		***1,001,316***

*USD Conversion Rates based upon exchange rate of 1 ECD =0.37 USD as of Oct, 2018

[10] Estimated as some vulnerable owners wouldn't declare income

14. References

Commonwealth of Dominica, Land Acquisition Act Chapter 53:02

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International Finance Corporation (2008). Environmental, Health and Safety Guidelines for Thermal Power Plant.

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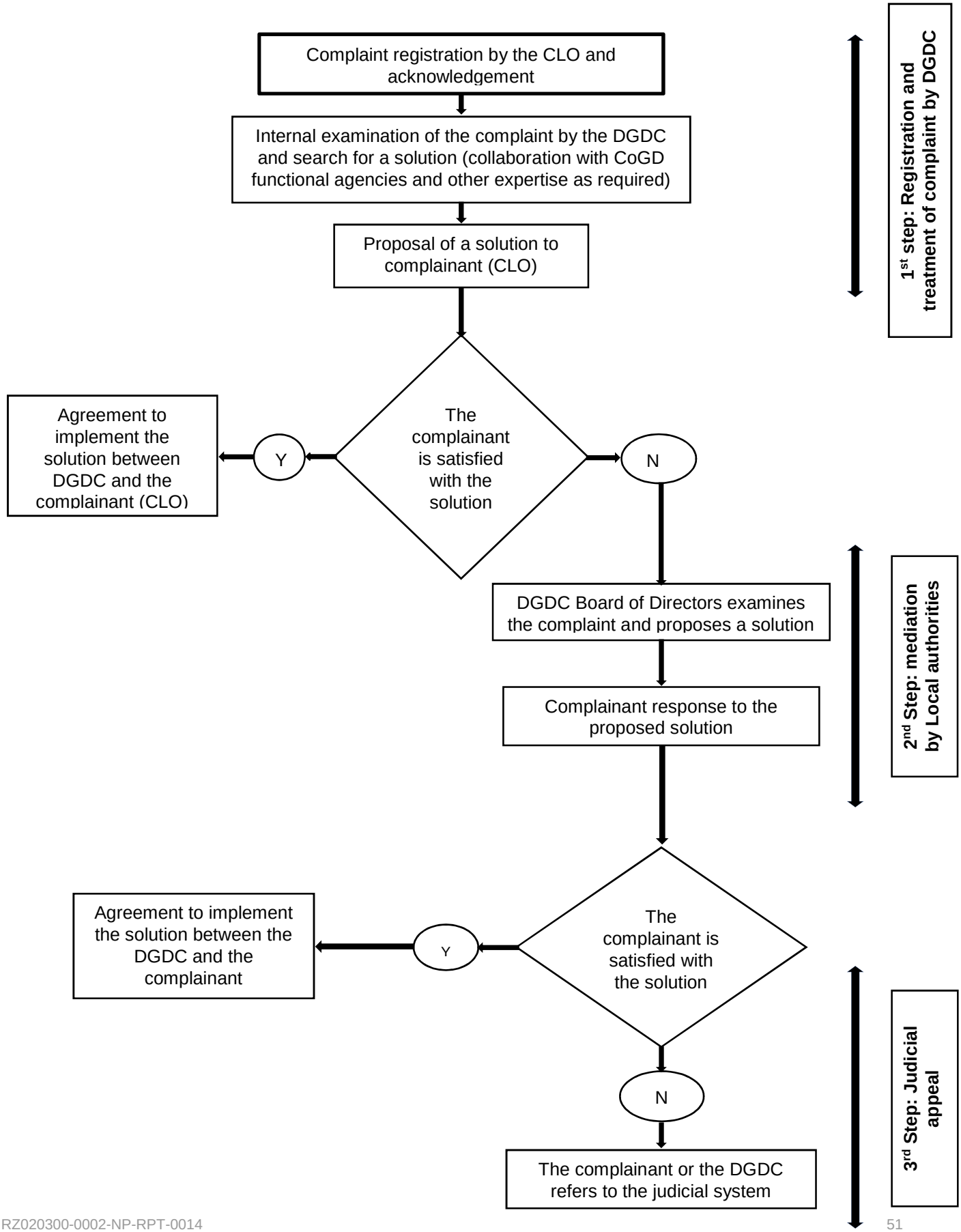
Post Disaster Needs Assessment Hurricane Maria, September 18 2017, Government of the Commonwealth of Dominica.

Appendix A. Grievance Mechanism Process



Appendix B. Assets Inventory- Physical Structures

Figure B.1 : Potential Residential Structure (currently Goat/Sheep Shed) A1

Figure B.2 : Rabbit Hutch Structure A2

Figure B.3 : Residential Structure B1

Figure B.4 : Residential Structure Incomplete C3

Figure B.5 : Shed C3

Appendix C. Basis of Valuation

Lands

Lands are valued at replacement cost by the Property Valuations Unit (PVU) of the Department of Lands & Surveys using the following approach:

Market Value + transactions cost

Market Value is defined as 'the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction after property marketing and where the parties had each acted knowledgeably, prudently and without compulsion'.

- Each property is seen as unique
- Inspection of each property is done and evaluated using the following factors
    - Services
    - Access
    - Topography
    - Land use
    - Market (supply & demand)
    - Size

Transaction Cost include all fees and costs associated with the transaction. These include:

Assurance Fund – 1%
Judicial Fee – $2^{1/2}$ %
Stamp Duty – 4%
Solicitor's Fees – 3%
Vendor's Fees – 3%

In instances where properties are acquired by the Government, provision is made in the Land Acquisition Act Chap 53:02 of the laws of Dominica and it is the common practice to waive the 3% vendor's fee. Surveyors fees and other costs incurred are also paid.

Structures

The valuation of structures is driven by the market. Given that underdeveloped nature of market forces in Dominica, the PVU uses a 'cost of construction' approach. A full inspection of the structure is done by experienced officers of the unit and the following factors taken into account:

- age of structure
- quality of finishing
- type of structure i.e. intended use and materials used in construction

Present rates used by the PVU range from EC$250-$275 per square foot. Straight line depreciation (age of building/anticipated life) is applied.

Crops

Crop valuation is done by officers of the Extension Unit of the Ministry of Agriculture using a combination of the following:

1. Cost of Production of a crop
2. Selling price at time of valuation; and
3. Bearing Capacity

1. Cost of Production
   An assessment is done to ascertain what stage in the production cycle the affected crops are at and known costs are apportioned based on field size and location. Activities include land clearing, ploughing and hoeing, planting, weed control & fertilising, pest and disease management, transportation, harvesting, and marketing. This method is best employed when farm records exist.

2.Selling Price at time of valuation

Where insufficient records exist, crops are valued at a reasonable/average selling price of the finished product at the time of valuation.

3Bearing Capacity

In addition to costs of production, the valuation considers the number of years/cycles for which the farmer could have reasonably expected to gain returns from the current crop. This is method is also used for the valuastion of livestock.