



Figure 1. Valley of Peace Community

Climate-smart Community Development Plan

Valley of Peace Community

July 2024



Figure 2. community members participating in the planning workshop

Belize Maya Forest Trust, Belize



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Technical Data:

Community	Valley of Peace
Protected Area (if relevant)	Belize Maya Forest
Protected Area Zone (if relevant)	Multiple Use Zone
Management Area (if relevant)	Cayo District
Area of Influence (ha)	1,331.41 ha
Habitat	Broadleaved tropical moist forest
Inhabitants	2,111
Families	401
Ethnicity	Hispanic
Tenure	State land
Date of Plan Development	09 August, 2024
Date of Updated Plan	-
Evidence of PIC¹	Community Minutes July 19, 2024
Leading Impacts of Climate Change	1. Heat Waves 2. Droughts 3. Fires 4. Floodings 5. Hurricanes
Priority Actions Required for Community Adaptation to Climate Change	1. Water harvesting structures 2. Fire Safety equipment 3. Agricultural irrigation system 4. Community demonstration plot 5. Farmers training sessions
Participating Organizations	Belize Maya Forest Trust, Wildlife Conservation Society (WCS), Friends for Conservation and Development, Belize Water Service Limited, Belize Pesticide Control Board, and Belize Forest Department.

¹ PIC: Previous and Informed Consent

1. Summary

This climate-smart community development plan was developed through a participatory workshop held on July 19, 2024, with 30 representatives of the community of Valley of Peace and partners, located in the southwest of the Belize Maya Forest, in the Cayo District, Belize. This document reflects the community's priorities regarding the actions and investments required to help them adapt to the impacts of Climate Change (CC). This summary of local priorities is designed to propel the sustainable development of the community - increasing social resilience and the sustainable use of the community's natural resources, helping to create the conditions for more effective biodiversity conservation.

2. Goal

2.1. General objective

Consult community leaders to generate a “*living document*” that can be periodically updated to guide actions and investments required to help the community adapt to the impacts of climate change and achieve its sustainable development goals.

2.2. Specific Objectives

- **Introduce the BLF:** Introduce the community to the project entitled “*Resilient and Biodiverse Landscapes of Northern Mesoamerica*” supported by BLF/DEFRA, clarifying programmatic goals and how the community can participate in the project.
- **Define CC Impacts:** Undertake participatory analysis of the impacts of climate change on the community, its livelihoods, and natural resources, prioritizing the predominant impacts.
- **Determine Adaptations:** Identify adaptation and/or mitigation actions that, according to the community, are required in the short term to reduce the impacts of CC on people, their livelihoods, and their natural resources.
- **Prioritize Actions and/or Investments:** Develop a list of the main actions or investments required to promote the community's adaptation to CC in the short/medium term, estimating the cost or effort required for each action or investment.
- **Consultation and Consensus:** Generate a plan document that details community priorities ratified through a process of prior informed consent (FPIC) by the larger community and/or their representatives, ensuring evidence of consent.
- **Management and Investment:** Share the final version of the plan with the community and its allied organizations so that the document can be used to detail the impacts of

the CC to third parties, and to guide BLF investments as well as additional resources from future funding sources.

3. Methodology²

Detail here in this table a brief descriptive summary of the main steps of the methodology including a short description of each step used to generate the Climate Smart Community Development Plan.

Table 1. Summary of Methodology

Step	Description
1. Preparation	Identify relevant literature on CC and local impacts; Coordinate workshop and logistical aspects with community representatives ensuring equitable representation (gender, youth, ethnicity); Prepare/review workshop agenda, and agree on roles and responsibilities with presenters and facilitators.
2. Workshop – Introduction	Presentation of participants, genesis of the BLF Mesoamerica project, and the objectives of the Climate-Smart Development Plan.
3. Workshop – Evidence of CC	Introduction to the impacts caused by CC at the local/regional level according to data, literature, or previous studies.
4. Workshop – Impacts of CC	Presentation of the impacts of CC in the area; and ratification and/or modification of the main impacts by community participants. Ratification and prioritization of the main impacts in plenary.
5. Workshop – segment 1	Work in groups to evaluate the main effects of CC on 1. People; 2. Livelihoods; and 3. Natural Resources (of importance to the community). Presentation of the results of each group to the plenary, followed by quick classification by the facilitators of the common elements between groups.
6. Workshop – Prioritization	Analysis and discussion of the results of the groups in plenary, identifying the most important impacts/effects on People, Livelihoods, and Natural Resources.
7. Workshop – segment 2	Work in groups to define the adaptations required to reduce the effects of CC on People, Livelihoods, and Natural Resources, prioritizing them and estimating the costs of adaptation actions/interventions using estimated cost ranges; also, If able, workshop facilitators can undertake a quick classification of common elements between groups to share with the plenary.
8. Workshop – Validation & Prioritization	Analysis and discussion in plenary to seek ratification of priority adaptations or investments identified by the groups, and to generate a “final list” of priority investments.
9. Workshop – segment 3	If feasible due to time constraints, conduct a third group exercise to identify community priorities regarding: 1. Services needed; 2. Infrastructure; and 3. Livelihoods that the community wishes to develop in view of the impacts of CC, prioritizing within each of the three categories.

² Please see the document “*Methodological Guide for the Generation of Climate Smart Community Development Plans*” (Alvarado et al, 2024) for additional details regarding the methodology.

10. Workshop – Next Steps	Detail next steps and a time frame for each, including: 1. Generation of the final document or “Plan” for presentation to the community; 2. Technical/legal and risk analysis of prioritized investments carried out with community representatives; 3. Presentation of the results of the workshop in a community assembly/meeting to ratify/adjust the results and ensure consensus and free and previously informed consultation, leaving a record of this through a “minute” or other written evidence.
11. Action & Implementation	Initiation of agreed actions including the management of the resources necessary to implement the plan. Implementation of agreed investments or interventions, according to the availability of resources.
12. Monitoring y Adaptation	Monitor the implementation of the “Plan” including the effectiveness of the actions/investments and adjust the plan periodically (every 2 years) according to lessons learned and progress in its implementation.

4. Introduction: Social, Geographic, and Environmental Context

The Valley of Peace community, situated in the Cayo District of Belize, represents a rural settlement characterized by its tranquil environment, strong sense of community, and agricultural endeavors. Founded in 1982, this community emerged as a rural refugee initiative, facilitated by a project initiated by the United Nations High Commissioner for Refugees (UNHCR) aimed at providing immigrants with a secure and peaceful living space, (Fredrick, 2017). At that time, the Prime Minister of Belize was the Rt. Hon. George Cadle Price, oversaw the proposal's presentation to the Senate, where it was debated and ultimately garnered majority approval. The initiative stipulated that for every three refugee families, one Belizean family would be included, fostering integration (Brown, 1998). Additionally, several families from the Toledo District, primarily of Ketchi Maya descent, migrated to these newly formed communities, contributing to the adaptation process and sharing their local customs with the Central American immigrants. The community is now largely composed of families from El Salvador and Guatemala, who have escaped the turmoil of civil wars and have since established their farms and homes in this peaceful setting. Today the community has over 2,111 inhabitants (DB, (2024).

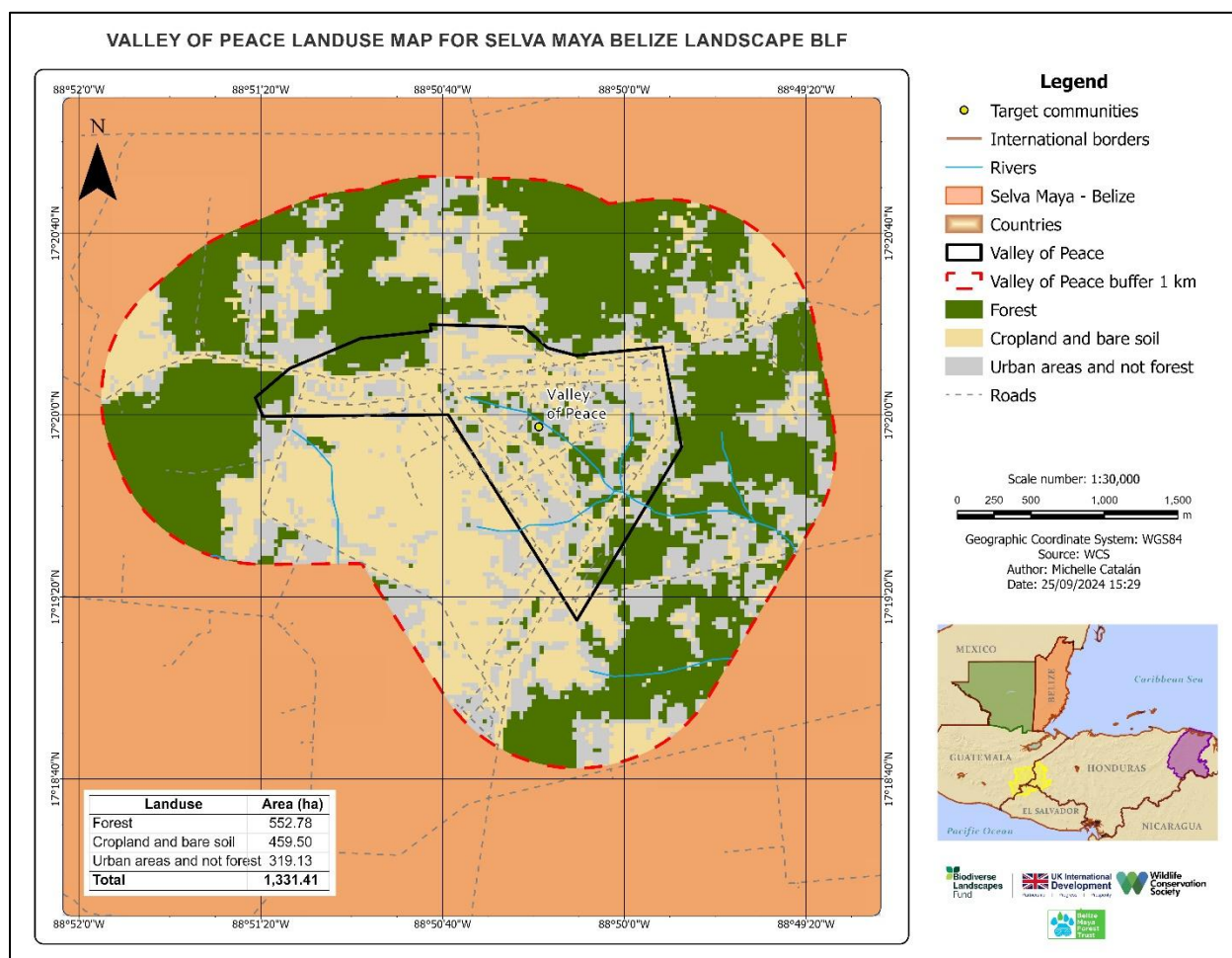
The Valley of Peace is situated in a lush valley surrounded by hills and farmland. The climate is tropical, with rainfall and fertile black soil, making it an ideal location for agriculture. The community provides fresh vegetables and fruits to the markets in Belmopan, San Ignacio, and Belize City, located 12 km, 32 km, and 71 km away from Belmopan, respectively (DB, (2024). The Santander Sugar Company Limited and Valley of Peace Farms Limited are the two principal companies in the vicinity, employing

community members and significantly shaping the local landscape. Their influence is evident in the ongoing changes to the environment, driven by agricultural expansion and development (Cayo, 2012).

Many individual and cooperative farmers practice conventional farming, relying heavily on rainfall for their water supply (irrigation). The Belize River serves as the primary freshwater source for the community, stretching 290 kilometers (180 miles) through central Belize and draining over a quarter of the country as it winds along the northern edge of the Maya Mountains before flowing into the sea just north of Belize City (Cocom, 2015). In addition, a freshwater creek runs through the community, while a nearby lagoon has been affected by the activities of large-scale agricultural operations. As a developed area, the region has seen a reduction in forest cover, increased agricultural land use, and minimal wildlife presence. The closest forest to the Valley of Peace is the Belize Maya Forest, located several kilometers away at the eastern-southeastern borders of the protected area.

The Valley of Peace stands out as a distinctive and dynamic community, serving as an exemplary model for other nations on how immigrant settlements can flourish and seamlessly integrate into Belizean society.

The following map shows the geographic area of Valley of Peace community.



5. Major Impacts of Climate Change / People

The Valley of Peace community members have identified five main vulnerabilities caused by climate change, which include heat waves, fires, droughts, floodings, and hurricanes. Table 2 shows a comprehensive list of the vulnerabilities and respective impacts requiring mitigation. Among these, heat waves stand out as a major concern due to their detrimental impact on people's well-being. Heat waves lead to various physical and mental health issues such as heat stroke, skin rashes, high blood pressure, stress, and headaches, among others. These health problems not only affect individuals but also strain the community's resources and healthcare system. The severity of heat waves has been rated as very high, rendering resources unfit for use and negatively impacting people's lives.

In the past five years, the Valley of Peace has experienced intense heat waves for at least ninety days a year, particularly during the dry season from March to May. This prolonged exposure to

high temperatures has significant consequences for the entire community. Illnesses resulting from heat waves not only incur additional expenses for individuals but also reduce the overall productivity of the human body. As such, addressing the vulnerabilities posed by heat waves is crucial for safeguarding the well-being and livelihoods of the Valley of Peace residents.

Hurricanes pose a significant risk to the daily lives of individuals, leading to a decrease in productivity and an increase in mental and physical strain. The area has experienced three hurricanes in the past two decades, with the aftermath lasting up to 180 days and impacting the entire community. The severity of flooding and droughts further exacerbates the stress and resource loss experienced by the population.

Flooding, occurring for the past five years in the last twenty years and lasting up to 120 days, hinders community access and heightens health concerns due to exposure to harmful bacteria, affecting the overall well-being of the community. Droughts, on the other hand, diminish the quality and quantity of water available for human consumption, posing a threat to human health and leading to an increase in malnutrition. The community has experienced intense drought for the past five years, lasting up to ninety days per year, and affecting most of the population.

Fires also present a notable risk to the well-being of individuals, resulting in resource loss and disruption of daily activities. The area has experienced fires annually for the past twenty years, with impacts lasting up to 150 days and affecting the entire community. The threat to human health from fires is significant, as it leads to air pollution due to the thick smoky air and exposure to diseases transmitted by vectors, resulting in respiratory and vision-related illnesses.

Overall, the combination of heat waves, hurricanes, flooding, droughts, and fires significantly impacts the daily lives of individuals, posing a threat to their physical and mental well-being, as well as their access to essential resources.

Table 2. Major impacts of climate change on people's well-being.

Vulnerability ³	Impact Requiring Mitigation	Severity (1-10) ⁴	Frequency ⁵		% Population Affected
			Years	Days	

³ Vulnerability: Potential categories include Drought, Flood, Forest Fires, Tropical Cyclones, Heat Waves, Rain Extremes, and Cold Fronts according to MARN/SEGEPLAN/RA (2022).

⁴ Severity (Scale of 1 to 10): 1 = minimal impact, human activities still proceed normally, but notice the change; 5= moderate impact, some humans are noticeably impacted/impeded; 10 = human beings are strongly disabled/affected.

⁵ Frequency: For "years" if classified as 1/20 = the vulnerability manifests itself once every 20 years according to recent community perception; if classified as 20/20 = manifests itself every year for the last

Heat Waves	High temperatures affect people's physical and mental health with more heat stroke, skin rashes, high pressure, stress, and headaches, to mention a few.	8	5/20	90	100%
	Illness poses additional expenses to people and lowers the productivity of the human body.				
Fires	Fire threatens human health due to air pollution and exposure to vector-borne diseases. Respiratory, vision, and other health problems.	6	20/20	150	100%
Drought	Water quality and quantity are not sufficient for the human body's needs. Lack of water access is a threat to human health.	7	5/20	90	80%
	Food quality is poor and increases malnutrition.				
Floodings	Reduce access to the community.	7	5/20	120	100%
	Increase of health issues due to exposure to bacteria.				
Hurricanes	Alters daily activities by reducing the productivity of people and posing mental and physical stress.	8	3/20	180	100%

6. Major Impacts of Climate Change / Livelihoods

Agriculture serves as the primary source of income for a substantial number of families residing in the Valley of Peace community, totaling over a hundred households. Apart from engaging in agricultural activities, families also rely on small-scale businesses operating within the community, income generated from tourism, and various external professional opportunities to sustain their livelihoods. However, the community has been

20 years, according to community perception, etc. For “days”, list the average number of days that this vulnerability impacts people each year, i.e., 2 = two days per year, and 365 = every day of the year.

grappling with the escalating intensity of heat waves over the past five years, which has had a profound impact on the entire populace. The heat waves have posed a significant challenge, rendering essential resources unsuitable for utilization and adversely affecting the lives of the residents. Table 3 presents a detailed overview of vulnerabilities, their impacts on individuals' livelihoods, and the necessary mitigation measures.

The detrimental effects of the heat waves are particularly evident in the agricultural sector, with farmers facing numerous obstacles in maintaining the quality and quantity of their produce. The excessive heat has stunted the growth of crops, resulting in undersized, less flavorful, and higher-priced agricultural products in the market. Moreover, the heightened cost of food production has placed a considerable financial burden on farmers, necessitating increased expenditure on pesticides to combat pests and diseases, additional fertilizers due to the soil's diminished fertility caused by the intense heat, installation of irrigation systems, and the transportation of water to farms due to inadequate storage facilities for perishable goods. Furthermore, farmers have noted a scarcity of seeds and a declining germination rate, which has compromised the fertile conditions required for successful crop cultivation. These challenges have raised concerns among all community members regarding food security and the preservation of their traditional farming practices.

The elevated temperatures also affect other sources of livelihood, albeit not as severe as they do farmers. It was noted by participants that small businesses are required to invest in extra ventilation or refrigeration systems, leading to increased electricity bills in order to maintain operations. On particularly hot days, the extreme temperatures become intolerable, resulting in the closure of schools, local offices, and businesses, thereby disrupting the daily routines and educational activities of children.

Over the last five years, drought has been identified as a significant threat, leading to heightened stress levels and substantial resource depletion among the population for up to 120 days. The lack of access to water has had a profound impact on the community, affecting essential activities like hydration, sanitation, and agricultural irrigation. The repercussions of these prolonged dry spells have been particularly felt by farmers, who have seen their irrigation systems become less effective and more costly. As a result, the quality and quantity of their produce have suffered, leading to financial losses and food scarcity in the region.

Ultimately, the scarcity of water caused by drought has jeopardized the fundamental right of individuals to access clean and safe drinking water, highlighting the urgent need for

sustainable water management practices and drought-resistant infrastructure to mitigate the impact of future dry spells.

Over the last two decades, the recurring fires have brought about significant distress and depletion of resources for the residents, lasting for a period of up to 30 days annually. Recent years have seen a surge in the intensity of these fires, posing a serious threat to the entire community. Most fires in and around the Valley of Peace community are attributed to milpa slash and burn practices, burning of waste materials, and sugar cane fields. The uncontrolled nature of these fires has resulted in substantial damage to properties and crops, thereby jeopardizing food security and the livelihoods of the people in the area.

Over the past two decades, hurricanes have been a significant source of stress and resource depletion for individuals, occurring every five years within that time frame, each lasting up to 8 days. The aftermath of these natural disasters includes severe damage to infrastructure, homes, and businesses, resulting in substantial economic losses and disruptions to daily activities like school closures.

In addition to the impact on urban areas, farmers also bear the brunt of these hurricanes, facing losses in terms of crops, livestock, and farm infrastructure. The destruction caused by these extreme weather events not only affects the livelihoods of farmers but also has long-lasting repercussions on the agricultural sector as a whole.

The impact of flooding in the Valley of Peace is considered moderate, with a noticeable effect on some individuals leading to complaints that affect a significant portion of the population for a duration of up to eight days. The Valley of Peace has been plagued by flooding events for a decade, resulting in substantial infrastructure damage and repair costs, as well as losses in crops and agricultural productivity due to inundated fields. The transportation of produce is hindered by flooded roads, exacerbating the issue of low food security in the region. Additionally, the tourism industry, a vital source of employment, suffers negative consequences as a result of these flooding events.

The aforementioned factors significantly contribute to forest loss, which has a direct effect on the livelihoods of local communities. A primary concern raised by community members is the increased presence of coyotes, which are non-native and invasive species that thrive in disturbed environments. Their scavenging habits pose threats not only to livestock but also to vegetable and fruit crops, exacerbating the challenges farmers face in pest management and further jeopardizing their economic stability.

Table 3. Major Impacts of Climate Change on Valley of Peace residents' livelihoods.

Vulnerability ⁶	Impact Requiring Mitigation	Severity (1-10) ⁷	Frequency ⁸		% Population Affected
			Years	Days	
Heat Waves	Farmers' production quality and quantity are reduced due to the underdevelopment of crops.	8.5	5/20	180	100%
	The cost of food production increases and profit decreases, due to the additional resources and investment needed to actually produce. The increased use of agrochemicals to treat pests and disease and boost soil fertility to produce. To support irrigation systems, transportation, and daily needs such as ventilation, more energy/fuel is used posing additional expenses.				
	The germination rate is becoming lower, affecting				

⁶ Vulnerability: Potential categories include Drought, Flood, Forest Fires, Tropical Cyclones, Frosts, Heat Waves, Rain Extremes, Landslides, and Cold Fronts according to MARN/SEGEPLAN/RA (2022).

⁷ Severity (Scale of 1 to 10): 1 = minimal impact, human activities still proceed normally, but notice the change; 5 = moderate impact, some humans are noticeably impacted/impaired; 10 = human beings are strongly disabled/affected.

⁸ Frequency: For "years" if classified as 1/20 = the vulnerability manifests itself once every 20 years according to recent community perception; if classified as 20/20 = manifests itself every year for the last 20 years, according to community perception, etc. For "days", list the average number of days that this vulnerability impacts people each year, i.e., 2 = two days per year, and 365 = every day of the year.

	fertile conditions for seeds.				
	With high temperatures and without proper storage, products spoil faster.				
Fires	Slash and burn have caused crop loss, putting food security and income at risk.	7	20/20	30	100%
	Loss of investment and property.				
Drought	The cost of food production increases and profit decreases, due to the additional resources and investment need to actually produce.	7	5/20	120	100%
	Shortage of water makes irrigation systems more expensive or inefficient.				
	Farmers' production quality and quantity are reduced due to the underdevelopment of crops.				
Floodings	Loss of infrastructure investment, and more expenses to repair.	5	10/20	8	70%
	Loss of crops and putting at risk food security. Difficulties in the transportation of crops due to the flooded roads.				
	Impacts negatively the tourism industry which is a source of employment.				

Hurricanes	Loss of homes, businesses, and farm infrastructures.	7	5/20	8	70%
	Economic loss on reinvesting expenses to restart, loss of crops and livestock, and building of infrastructure loss.				
	Reduce educational opportunities with fewer school days.				

7. Major Impacts of Climate Change/ Natural Resources

The community of Valley of Peace relies heavily on the nearby Belize River, forest, fertile soil, and wildlife for their livelihood and overall well-being. The presence of these natural resources is crucial for sustaining the community's way of life. Unfortunately, fires have been identified as a significant threat to the area, posing extreme vulnerability to the residents. These fires have not only impacted the environment but have also put human lives at risk. Over the past two decades, fires have become more frequent, with occurrences in the last ten years lasting for up to 120 days at a time, causing widespread destruction and depletion of the surrounding forests and wildlife. Table 4 provides a comprehensive summary of vulnerabilities, their effects on natural resources, and the mitigation strategies suggested by participants.

As a result of the fires, participants in the community have noticed a decline in wildlife sightings compared to previous years. This has led to a decrease in game-meat hunting activities as the wildlife population diminishes. Additionally, the once-flowing watersheds that used to provide water to the community, such as creeks, are now dry due to the environmental degradation caused by the fires and deforestation. The impact of these changes is not only felt in the ecosystem but also in the daily lives of the residents who rely on these natural resources for their survival. It is evident that the health of the environment is closely linked to the well-being of the community, making it imperative to address the issue of fires and their destructive effects on the Valley of Peace community.

Over the last decade, droughts have been escalating annually, lasting up to 180 days each year and impacting a significant portion of the population. This has led to an

increased vulnerability, particularly in terms of compliance with the human right to clean water. The frequency and intensity of drought-induced burns have made the environment more susceptible to wildfires, resulting in damage to crop production and soil acidification. The excessively dry conditions have caused the soil to crack and form holes, further exacerbating the situation. Additionally, the Belize River, as well as nearby creeks and lagoons, have experienced significantly reduced water levels, posing a threat to the community's water supply.

High vulnerability to heat waves is a significant concern, as it renders resources unusable and negatively impacts people's lives. Participants have noted the increasing temperatures over the past few decades, with heat waves lasting up to 120 days, affecting the entire community. Access to water is particularly low during the dry season when heat waves are most severe. Farmers have observed that the first rain after a heat wave can damage crops, similar to the effects of acid rain.

Hurricanes have been assessed as having a moderately high vulnerability, with six occurrences in the past twenty years and the potential impacts to last up to 90 days aftermath. They have a significant impact on the population and the natural environment, leading to resource loss and disruption of daily activities. Additionally, hurricanes disrupt the natural balance of ecosystems and have a heavy impact on farmers' crops, contributing to topsoil erosion.

Floods have been given a low rating, and it is believed that they can be managed through changes in the way people live and the environment, with only minimal loss of natural resources. Over the past twenty years, there have been flooding events every five years, lasting up to 30 days and impacting at least half of the population. The floods result in poor water quality due to contamination from bacteria and increased soil runoff.

Table 4. Major Impacts of Climate Change on the Natural Resources of the Community.

Vulnerability ⁹	Impact Requiring Mitigation	Severity (1-10) ¹⁰	Frequency ¹¹		% Population Affected
			Years	Days	

⁹ Vulnerability: Potential categories include Drought, Flood, Forest Fires, Tropical Cyclones, Frosts, Heat Waves, Rain Extremes, Landslides, and Cold Fronts according to MARN/SEGEPLAN/RA (2022).

¹⁰ Severity (Scale of 1 to 10): 1 = minimal impact, human activities still proceed normally, but notice the change; 5= moderate impact, some humans are noticeably impacted/impered; 10 = human beings are strongly disabled/affected.

¹¹ Frequency: For "years" if classified as 1/20 = the vulnerability manifests itself once every 20 years according to recent community perception; if classified as 20/20 = manifests itself every year for the last 20 years, according to community perception, etc. For "days", list the average number of days that this vulnerability impacts people each year, i.e., 2 = two days per year, and 365 = every day of the year.

Heat Waves	The source of water runs low and causes a lack of water availability.	8	10/20	120	100%
	The heat creates the environment and conditions for new diseases and pests for crops and soil.				
	The first rain after a heat wave damaged crops like acid rain.				
Fires	Fires cause massive deforestation and affect soil fertility, and it becomes more acidic.	10	10/20	120	100%
	Biodiversity loss affects the ecosystem balance and reduces their population and in turn fewer hunting activities.				
Drought	Increase chances of fires.	9	10/20	180	85%
Floodings	Bad water quality due to contaminated sources by bacteria.	4	5/20	30	50%
	Increase of soil erosion and runoffs.				
Hurricanes	Alters the natural balance of ecosystems.	6	6/20	90	100%
	Plants do not grow properly, and it affects the quality and quantity of water and food.				

Participants have noted the sudden and intense climate changes between floods, droughts, and heat waves. These extreme weather events have a significant impact on the livelihoods of the affected population, and it is crucial to find sustainable solutions to mitigate their effects. Efforts to address these challenges should focus on both short-term

responses and long-term adaptations to ensure the resilience of communities in the face of such environmental threats.

8. Actions/Investments Required to Adapt

The participants successfully identified five significant vulnerabilities that have far-reaching impacts on the well-being of individuals, their livelihoods, and the natural environment, resulting in severe consequences. Table 5 provides a comprehensive summary of these vulnerabilities, their impact and the intervention strategies suggested by participants. One of the major impacts that require urgent attention is the lack of access to water, which affects various aspects of community members' well-being. This issue leads to an increase in physical and mental health problems, as well as economic losses in agricultural activities and local businesses. To address this pressing concern, the participants have proposed a series of intervention actions aimed at mitigating the effects of climate change and improving access to clean water.

The suggested intervention actions include implementing water harvesting techniques such as wells, tanks, and drums, as well as enhancing irrigation systems to ensure a more sustainable water supply. Additionally, the participants have recommended the construction of man-made ponds equipped with pumps to facilitate water storage and distribution. Improving water treatment plants through the use of advanced technology, establishing flush-out points, and implementing watershed management strategies are also crucial steps in addressing the water access issue effectively.

Furthermore, reforestation efforts play a vital role in enhancing water resources and protecting the environment. The participants have proposed initiatives such as tree planting along riparian areas, conducting awareness campaigns to educate the community about the importance of water conservation, and advocating for stronger laws to safeguard water sources at the national level. While these intervention actions come with a significant cost ranging from \$10,000 to over \$100,000, the community can contribute through labor, human resources skills, time commitment to participate in activities, providing venues, and offering refreshments. However, due to the lack of financial resources and expertise within the community, external assistance is required to successfully implement these crucial interventions.

The occurrence of escape fire represents a significant vulnerability that can lead to negative consequences, including air pollution, deforestation, economic losses in terms of farm and property investments, depletion of wildlife populations, and degradation of watershed ecosystems. In response to this pressing issue, participants emphasized the importance of taking proactive measures to address the situation. They proposed that intervention efforts should be accompanied by an extensive awareness campaign aimed at educating the community on the proper methods of burning garbage and milpa. Additionally, to establish a community-based firefighting group tasked with executing and planning controlled burns. This group would need to be equipped with the necessary tools and provided with adequate training to effectively carry out effective and safe burns.

Furthermore, there was a strong emphasis on the need for reforestation initiatives in the surrounding watersheds, farms, and community areas to mitigate the adverse effects of deforestation and forest fires. Participants highlighted the necessity of implementing and enforcing laws related to fire usage, as well as introducing preventative measures to combat deforestation and forest fires. It was also recognized that collaboration with large farms and companies in the vicinity, such as Santander, and Valley of Peace Farms LTD, would be crucial in promoting reforestation efforts and ensuring the proper use of fire. The financial commitment required for these endeavors was estimated to range from \$25,000 to over \$100,000, underscoring the scale and importance of the proposed interventions.

Several farmers engaged in discussions regarding the challenges posed by climate change. The current climate conditions have become increasingly unpredictable, disrupting the traditional farming calendar and presenting various obstacles. One of the most significant impacts noted by participants is the rise in pests and diseases within their farms, leading to an increase in chemical usage, deterioration of soil health, and a decline in both the quality and quantity of agricultural production.

To address these issues, participants proposed the adoption of regenerative agriculture practices. These practices would involve incorporating pest management training, preserving local and native seed varieties that are resilient to drought, heat, pests, and diseases, as well as diversifying crop production to enhance soil health. To implement these practices effectively, soil laboratory tests and guidance from experts in regenerative agriculture are essential. Establishing a demonstration plot in the Valley of Peace community, along with initiating an exchange program with neighboring communities to share knowledge and innovative agricultural techniques, were also highlighted as crucial steps. Additionally, participants stressed the importance of enforcing laws to regulate seed quality and the use of agrochemicals. The community, which consists of over 100 farmers, would greatly benefit from the presence of an agronomist to provide support and guidance. With concerns about livelihoods and food security looming, the transition to regenerative farming practices is seen as a necessary long-term investment, requiring a budget exceeding \$200,000.

The Valley of Peace community is significantly affected by natural disasters like flooding, hurricanes, and droughts, leading to severe economic and infrastructure damage. These occurrences have been increasing in frequency and intensity, emphasizing the urgent need for a comprehensive natural disaster plan. Suggestions from participants include strategically planning the location of residential areas and farms to avoid flood-prone regions, enhancing infrastructure designs and materials, and steering clear of swampy

areas susceptible to flooding. Additionally, it is crucial to establish a relief program for natural disasters and maintain a constant supply of medical resources for the community.

By implementing a well-thought-out natural disaster plan, the Valley of Peace can better prepare for and mitigate the impacts of future calamities. This proactive approach will not only safeguard lives and properties but also ensure the community's resilience in the face of adversity. Furthermore, the development of a relief program and the availability of medical supplies will help in efficiently responding to emergencies and providing necessary assistance to those in need. Overall, a comprehensive strategy focusing on disaster preparedness, infrastructure improvement, and resource management is essential for the Valley of Peace to thrive during natural challenges.

The participants have recognized the significance of adopting a psychosocial environmental approach when it comes to the community's various projects and initiatives. This approach is crucial in fostering positive change within the community and inspiring others to embrace resilience and openness towards new practices. To ensure the success and sustainability of these projects, it is essential to have dedicated individuals who can take on leadership roles and facilitate the initiatives. Given that many community members are employed and have limited availability, having reliable leaders is key to maintaining consistency and progress.

In the course of the data analysis workshop, various interventions were recognized as strategic initiatives rather than mere isolated efforts. The activities aimed at restoring and safeguarding freshwater watersheds through tree planting, public awareness campaigns, and effective law enforcement can significantly contribute to enhancing community well-being, ensuring a reliable water supply for both farmers and the broader community, and fostering a healthy ecosystem. As an agricultural community, the adoption of regenerative agriculture practices and sustainable agribusiness models can play a crucial role in improving both the quality and quantity of agricultural production, while also securing market access and increasing the benefits derived from the soil, ultimately enhancing the livelihoods of farmers.

Despite facing challenges, such as limited resources, the community members are willing to contribute in various ways to enhance their climate change resilience. They are willing to offer their time, provide community spaces for project implementation, and even contribute labor and refreshments to support the initiatives. By leveraging these available resources and fostering a sense of collaboration and shared responsibility, the community can work towards building a more sustainable and resilient environment for all its members.

Table 5. Valley of Peace Actions/Investments Required to Adapt to Climate Change.

Category	Impact Requiring Mitigation	Priority ¹²	Action/Intervention	Cost Range ¹³	Community Contribution	Other potential contributor
People	Increase in physical and mental health issues	4	Create awareness on the proper way to burn garbage in the community and milpa.	4	Labor, human resources, time to participate in activities and training, venue, refreshment, nursery space.	Ministry of Health and volunteer missionaries. Ministry of Agriculture, Pesticide Control Board, Friends for Conservation and Development, Belize Water Service, Santander and Valley of Peace Farms LTD.
People			Psychosocial environmental approach to community.			
People			Increase medical supply for the community.	6		
People	Economic/crop loss	3	Implementation of regenerative agriculture practices.	6		
People			Develop an exchange program with other communities.			
			Develop a relief program for natural disasters.			
			Collaborate with farmers to supply the community school feeding programs with basic fruits and vegetables.			
	Air and water quality	3	Improve water treatment plants using technology and establish flush-out points.	6		

¹² Ranked 1 through 4.

¹³ Cost Range: An initial or “rough” estimate of how much each action or investment could require dollars, to later be evaluated in a technical-financial analysis. In this case the categories are: 1. ≤1k; 2. >1k < 5k; 3. > 5k < 10k; 4. >10k < 15k; 5. >15k < 25k; 6. >25k <100k; 7. >100k.

Category	Impact Requiring Mitigation	Priority ¹²	Action/Intervention	Cost Range ¹³	Community Contribution	Other potential contributor
			Invitation to Santander to support community initiatives.			
Livelihoods	Lack of water access	4	Water harvesting through wells, tanks, and man-made ponds with pumps and drums, and improve irrigation systems.	7		
Livelihoods			Awareness campaigns regarding the importance of water and the environment.			
Livelihoods			Improved laws to protect water sources.			
Livelihoods			Develop a watershed management action.			
Livelihoods	Loss of infrastructure	3	Improve infrastructure designs and materials.	6		
Livelihoods			Develop a natural disaster plan for the community, and do not build homes in swampy areas.			
Livelihoods	Food security and pest and diseases	4	Collect local and native varieties of seeds that can resist drought, heat, pests, and diseases, and diversify produce.	6		
Livelihoods			Improve soil health by adopting better practices.			
Livelihoods			Enforce laws that would regulate the quality of seeds and			

Belize Water Service, Forest Department, Hydrology department, NEMO, Ministry of Agriculture, Central Farm UB, CARDI and Friends for Conservation and Development and Pesticide Control Board

Category	Impact Requiring Mitigation	Priority ¹²	Action/Intervention	Cost Range ¹³	Community Contribution	Other potential contributor
			the use of agrochemicals.			
			Find opportunities to bring value-adding products and build agro-processing and business capacity.			BELTRAID E, BMDC, BMFT
Natural Resources	Low water availability	4	Reforestation actions include the integration of agroforestry systems, technician support, tree planting along riparian areas, and carbon credit in the long term.	7		Forest Department, NEMO, Fire department, Friends for Conservation and Development
Natural Resources			Expert support is needed.			
Natural Resources			Reforestation awareness campaign.			
Natural Resources	Fires and smoke	4	Organize a community group of firefighters that would implement, and plan burn control. The firefighting group will require equipment.	6		
			Enforce laws and policies regarding fires and their proper use.			
	Deforestation	4	Motive people to reforest their community areas. Preventative laws for deforestation and forest fires.	6		
	Pests and disease	3	Training to treat and prevent pests and diseases without the use of chemicals.	7		

Category	Impact Requiring Mitigation	Priority ¹²	Action/Intervention	Cost Range ¹³	Community Contribution	Other potential contributor
			Soil lab tests and expert support are needed.			
			Demonstration plots in the community of Valley of Peace.			

9. Community Priority Development Needs in the Context of Climate Change

In Section VIII, the participants discussed various potential interventions aimed at adapting to the ongoing effects of climate change on people, their natural environment, and livelihoods. The community has pinpointed several critical developmental requirements related to services, infrastructure, and livelihoods that must be addressed to ensure the effectiveness and sustainability of these interventions.

9.1. Priority Services

9.1.1. Family Health Services

The community is equipped with a health center; however, it is essential to ensure a continuous supply of medical resources for its residents. This need becomes particularly urgent during the dry season, when children, the elderly, and individuals suffering from serious health conditions are at heightened risk due to severe temperatures. As a farming community, the Valley of Peace farmers can collaborate with the local schools to support and supply the schools' feeding programs with nutritious vegetables and fruits.

9.1.2. Agronomist extension service

The community comprises over one hundred farmers and serves as the primary source of vegetables and fruits for the local markets in central Belize. These farmers have expressed a strong desire and willingness to learn adaptation techniques for pest management and regenerative agricultural practices. They seek the assistance of an agronomist who can provide expert guidance and support throughout the transition process, ensuring that they effectively implement these innovative methods.

9.1.3. Water management specialist

Access to water is a critical concern for the entire community, and participants indicated that expert assistance in water management would be beneficial in addressing this challenge. This support encompasses various aspects, including conducting water testing and analysis, providing guidance on enhancing the community's water infrastructure, and offering help in the development of water harvesting systems.

9.1.4. Forest fire specialist

The adverse effects of fire have significantly affected the livelihoods, health, and safety of community members. Currently, the community lacks a comprehensive fire safety plan and does not have trained individuals equipped to handle fire safety and controlled burns. In response to this pressing issue, the participants express a strong desire to educate community members, particularly the youth and farmers, on essential fire safety practices and the correct methods for conducting controlled burns.

9.1.5. Soil testing service

As conventional farming practices become more widespread, there is a growing interest among farmers in conducting soil testing to assess and comprehend the variations in their soil health. This proactive approach enables them to identify specific issues affecting their soil and to implement strategies aimed at restoring its vitality and overall health.

9.2. Priority Infrastructure

9.2.1. Community Water System

Each year, the members of the community encounter various technical and infrastructural challenges related to their water system. They express a strong desire to enhance the existing infrastructure of their water supply system and, if feasible, to incorporate advanced technologies to improve its efficiency and reliability.

9.2.2. Water harvesting structures

Agricultural producers and residents expressed the necessity for supplementary water harvesting systems, including wells, tanks, and ponds, in addition to the existing community water infrastructure. Specifically, farmers highlighted the importance of implementing water harvesting solutions, such as wells and artificial ponds, to preserve their agricultural production during the dry months.

9.2.3. Fire Safety equipment

The community expresses a strong desire to train its members in fire safety; however, this initiative would necessitate beginning from the ground up, which includes not only the development of skills and knowledge but also the acquisition of vital equipment such as water tanks, trailers, tools, and technological resources.

9.2.4. Community hurricane infrastructure

The frequency and intensity of natural disasters, particularly hurricanes, have significantly escalated in the region, prompting the community to recognize the urgent necessity for enhancing their existing infrastructure, specifically shelters, to better endure hurricanes and other calamities like flooding. Although the community center has undergone some improvements, it still requires substantial further development to adequately serve as a reliable shelter for its residents.

9.3. Priority Livelihoods

9.3.1. Agricultural irrigation system

At present, a significant number of farmers lack access to an irrigation system. Given the rising temperatures and extreme heat conditions, it has become imperative for these farmers to consider investing in the establishment of an irrigation system complemented by water harvesting structures. Such an irrigation system is essential for enhancing the production of vegetables and fruits, which serve as the primary source of income for many farmers.

9.3.2. Community demonstration plot

Farmers have shown a keen interest in acquiring knowledge about farming practices that adapt to climate change; however, the associated economic risks pose a significant challenge that many cannot bear. Establishing a demonstration plot that showcases these adaptive practices will provide farmers with the necessary insights to comprehend and effectively implement regenerative agriculture techniques.

9.3.3. Farmers and community training sessions

In addition to the demonstration plot, there is a significant interest among farmers in engaging with training programs focused on regenerative agriculture practices and participating in knowledge exchange initiatives. This endeavor will facilitate training sessions within the community, where both individual and cooperative farmers can collaborate with experts in the field, as well as learn from the experiences and insights of fellow farmers in Belize. Farmers and other members of the community demonstrate a strong desire to acquire knowledge and develop agro-processing skills to create value-added products and establish sustainable businesses for their families and the community.

9.3.4. Natural disaster relief program

The period following a natural disaster represents the most arduous stage of such an event. Implementing a natural disaster relief program is essential to promptly assist the most at-risk families in meeting their fundamental human necessities. This strategic plan will provide community leaders with a clear framework for navigating the complexities that arise in the aftermath of various natural disasters, including hurricanes, wildfires, floods, and droughts.

9.3.5. Awareness campaigns

The participants proposed the development and execution of a comprehensive series of awareness campaigns aimed at fostering appreciation and motivation within the community regarding specific themes such as appropriate burning practices, the conservation of fresh watershed resources, and the importance of reforestation. It is essential that these campaigns engage the entire community, with particular emphasis on farmers, educational institutions, and local leadership. Furthermore, participants indicated that involving youth and other community members in the awareness initiatives would significantly enhance the outreach and effectiveness of the campaigns. Ultimately, this awareness effort is expected to bolster various initiatives and sustainable projects within the community.

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11. Annexes

11.1. Maps and Graphic Resources

Cayo District

Temperature and Precipitation

BELMOPAN (1991-2020) DAILY & MONTHLY AVERAGES						
	TEMPERATURE (°C)			PRECIPITATION (mm)		
	TMP	MAX	MIN	PRECIP		
JAN	23.7	28.2	19.1	135.2		11
FEB	24.4	29.7	19.2	51.3		6
MAR	25.5	31.2	19.8	48.5		5
APR	27.6	33.5	21.7	41.4		3
MAY	28.6	34.1	23.1	119.3		7
JUN	28.3	32.7	23.8	259.9		14
JUL	27.7	32.2	23.3	245.3		16
AUG	27.9	32.6	23.2	226.1		14
SEP	27.9	32.5	23.2	221.8		15
OCT	26.8	31.2	22.5	244.2		14
NOV	25.1	29.4	20.7	201.9		13
DEC	24.2	28.6	19.8	134.9		13
Annual	26.5	31.3	21.6	160.8		11
Years	25	25	25	29		29

Source of the above data: Historical and current records at the Belize Agriculture Health Authority (BAHA) located 1 Mile from the Capital of Belize, Belmopan City in the Cayo District . Latitude 17° 15' N, Longitude 088° 46' W elevation of 90 meters

The following information is sourced from the National Meteorological Service of Belize.

Table 6. Precipitation and average temperature trends from 1991 to 2020 from the nearest weather station for Valley of Peace, Belmopan.

LEGEND:

📅 - Daily Average,

📅 - Monthly Average,

💧 - NUM Rain Days > 1mm

Table 7. Belize hurricanes and storms historical trends from 1864 to 2024.

Storms:

TD Tropical Depression, TS Tropical Storm

Hurricanes:

H1 Category 1, H2 Category 2, H3 Category 3, H4 Category 4, H5 Category 5

*** The values in the table below are with respects to the nearest point to Belize.

BELIZE HURRICANES AND STORMS HISTORICAL TRENDS				
NAME	DATE (Y-M-D)	Classification	NEAREST DISTANCE (mi)	INTENSITY (mph)
UNAMED	1864-08-31	H1	MADE LANDFALL	80
UNAMED	1866-08-16	H1	55	70
UNAMED	1870-11-01	H1	20	80
UNAMED	1874-09-25	TS	85	60
UNAMED	1879-08-20	H1	100	80
UNAMED	1889-09-18	H1	77	85
UNAMED	1892-10-12	H2	MADE LANDFALL	100
UNAMED	1893-07-07	H2	MADE LANDFALL	100
UNAMED	1898-09-16	TS	MADE LANDFALL	45
UNAMED	1916-09-02	TS	MADE LANDFALL	45
UNAMED	15/10/1916	H2	87	110
UNAMED	1918-08-26	H1	MADE LANDFALL	80
UNAMED	1921-06-17	TS	MADE LANDFALL	40
UNAMED	1924-06-18	TS	MADE LANDFALL	40
UNAMED	1931-07-12	TS	MADE LANDFALL	45
UNAMED	1931-08-16	TS	MADE LANDFALL	45
UNAMED	1931-09-10	H3	MADE LANDFALL	125
UNAMED	1931-09-14	TS	MADE LANDFALL	70
UNAMED	1932-10-01	TS	MADE LANDFALL	45
UNAMED	1932-10-10	TS	MADE LANDFALL	45
UNAMED	1933-09-12	H1	44	80
UNAMED	1933-09-30	TS	MADE LANDFALL	40
UNAMED	1934-06-05	TS	MADE LANDFALL	45
UNAMED	1936-06-12	TS	70	40
UNAMED	1938-10-11	TS	MADE LANDFALL	45
UNAMED	1939-06-12	TS	13	35
UNAMED	1940-09-21	TS	MADE LANDFALL	45
UNAMED	1941-09-28	H1	MADE LANDFALL	90
UNAMED	1942-09-22	TS	MADE LANDFALL	40
UNAMED	1942-11-09	H2	MADE LANDFALL	100
UNAMED	1943-10-22	TS	MADE LANDFALL	40
UNAMED	1945-08-31	TS	MADE LANDFALL	40
UNAMED	1945-10-04	H1	MADE LANDFALL	100
UNAMED	1946-10-05	TS	65	35
GILDA	1954-09-27	TS	44	60

BELIZE HURRICANES AND STORMS HISTORICAL TRENDS				
NAME	DATE (Y-M-D)	Classification	NEAREST DISTANCE (mi)	INTENSITY (mph)
JANET	1955-09-28	H5	60	170
ABBY	1960-07-15	H1	64	80
ANNA	1961-07-24	H1	54	80
HATTIE	1961-10-31	H4	MADE LANDFALL	140
FRANCELIA	1969-09-03	H2	74	98
EDITH	1971-09-11	TS	26	70
LAURA	1971-11-20	TS	34	70
CARMEN	1974-09-02	H4	68	138
FIFI	1974-09-19	H2	72	105
GRETA	1978-09-19	H2	30	110
HERMINE	1980-09-22	TS	29	65
GERT	1993-09-18	TS	13	40
KYLE	1996-10-12	TS	67	50
MITCH	1998-10-27	H5	*150	170
KEITH	2000-10-01	H3	35	125
CHANTAL	2001-08-21	TS	70	60
IRIS	2001-10-09	H4	MADE LANDFALL	140
DEAN	2007-08-21	H5	85	170
ARTHUR	2008-05-31	TS	35	45
ALEX	2010-06-26	TS	10	60
KARL	2010-10-15	TS	85	60
MATTHEW	2010-10-25	TS	90	40
RICHARD	2010-10-25	H2	MADE LANDFALL	98
HARVEY	2011-08-21	TS	MADE LANDFALL	60
RINA	2011-10-26	H1	130	90
ERNESTO	2012-08-07	H1	85	85
EARL	2016-08-04	H1	MADE LANDFALL	85
FRANKLIN	2017-08-07	TS	185	55
NATE	2017-10-06	TS	240	45
NANA	2020-08-02	H1	MADE LANDFALL	65
ETA	2020-11-01	TD	90	
IOTA	2020-11-16	TS	239	
JULIA	2022-10-08	TS		
LISA	2022-11-02	H1	MADE LANDFALL	85
NADINE	2024-10-19	TS	MADE LANDFALL	60
SARA	2024-11-17	TD	MADE LANDFALL	35

11.2. Evidence of Free Prior and Informed Consent (FPIC)

Provide here evidence that documents community approval of the final version of the plan; for example “minutes” of a community meeting (preferably representing the entire target community and/or organized group) that explicitly recognizes the results of the planning exercise and its results, or a Conservation Agreement that explicitly mentions the planning exercise and its results, or a formal letter from the community or group that explicitly mentions the planning exercise and its results.

Letter of Invitation for the planning workshop

[VOP workshop Letter of Invite.docx](#)

[VOP Validation workshop Letter of Invite.docx](#)

11.3. Minutes of the planning workshop

- Images folder link: [Workshop notes](#)

Meeting Summary

Topic: Community Climate Smart Planning at Valley of Peace

Date: June 19th, 2024

Objectives of Meeting:

- Encourage active participation to enhance discussions and gain diverse perspectives from Valley of Peace community members.
- Identify the community's most urgent vulnerabilities and create an open space for sharing ideas effectively.
- Ensure participants understand how the identified vulnerabilities affect personal, environmental, and livelihood aspects.

Introduction:

- The Belize Maya Forest Trust held its Community Climate Smart Planning with the Valley of Peace Community. Ms. Elma and Ms. Sayuri initiated by welcoming individuals present and allowing space for each one of them to introduce themselves and which organization they are representing and sharing a bit of their role.
- Ms. Sayuri shared some information on the organization's history naming various collaborates such as BLF and naming several local communities they work with including Gallon Jug, Blue Creek and Los Tambos. These communities are integral to the success of the conservation efforts and sustainable development programs. The BMFT works closely with a range of community members to ensure a holistic approach to conservation and development. Present on this activity were teachers, the village chairman, members of the waterboard committee and members of cooperatives such as local farming or shop owners which promote economic development. By incorporating the insights and perspectives of social workers,

teachers, village leaders, waterboard members, cooperatives, and other community members, BMFT aims to create a plan that reflects the collective insight and needs of the community. This collaborative approach ensures that the strategies developed are practical, inclusive, and effective in addressing the challenges posed by climate change.

- The BMFT's initiative is comprised of three core programs: (I think I missed on some part of this presentation) agriculture, community outreach, and climate change. The agriculture program focuses on sustainable agricultural practices that enhance productivity while conserving the environment, including training on organic farming, crop diversification, and soil conservation techniques. The community outreach program engages with the local population to raise awareness about environmental conservation, health, and education through workshops and community meetings. The climate change plan aims to address and mitigate the impacts of climate change through community-driven strategies.
- Ms. Sayuri explained that today's activity is focused on creating a community climate change plan. The goal is to achieve a common objective by incorporating various perspectives from community members. She also invited everyone present to share the challenges they have encountered due to climate change.
- During the meeting, several community members shared their experiences with recent fires that have destroyed their plantations. A member of the waterboard discussed the challenges faced during the dry season. One individual recounted his experience with fire damaging 8 acres of land, highlighting the significant impact of fires on the community, especially with forest fires surrounding the area. Droughts have increased the frequency of these fires, and one person mentioned that although he had previously protected his land, this year all his reserves caught fire.
- Additionally, another individual observed an increase in pests, such as whiteflies. Mr. Humberto added that the rise in whitefly populations has decreased food production, affecting crops like zucchini, pumpkins, and cabbages. Another community member expressed the importance of accountability for one's actions and suggested that, with many community leaders present, they could arrive at a solution. Concerns about the scarcity of seeds for reforestation were raised, with a suggestion to create a nursery to address this issue.
- Health concerns were also discussed, with reports of increased respiratory illnesses due to smoke from fires. While flooding is not currently a problem, individuals expressed concerns that it could become an issue as rains increase and the soil becomes more saturated. Past droughts have led to significant water scarcity, further complicating the community's challenges.
- Other vulnerabilities caused by climate change were identified and highlighted for the group discussion, these included drought, flooding, hurricanes and heat waves.

- After hearing from different community members, Ms. Sayuri divided the attendees into three groups to discuss identified vulnerabilities and elaborate on how they affect individuals personally, the natural environment, and their livelihoods. This collaborative approach aimed to address the diverse issues raised and develop a comprehensive community climate change plan.

GROUP NUMBER 1: Personal level

Heat wave/drought:

- Affects mental health.
- People's productivity decreases as they fatigue very quickly at work.
- Children are less productive in school.
- Quality of water and food decreases. The crops we buy become more expensive.
- It also affects air quality.
- Malnutrition: people are more exposed to respiratory illnesses.
- There is also dehydration due to lack of water, fainting due to the heat, and chronic illnesses in the elderly and newborns. These issues are caused by heat and droughts.
- Over a period of 5/20 years, lasting up to 90 days each year, which is 3 months.
- Risks include personal hygiene problems and lack of water in schools. This affects 100% of the population.

Forest Fires:

- Affect air quality.
- Cause health problems.
- Impact people who commute by bicycle/motorcycle.
- Burn pastures and destroy pineapple plantations.
- Contaminate water, leading to economic impacts. People's productivity decreases, and there is less to do.

Flooding:

- Reduces accessibility to the community.
- Affects crop production, increasing crop mortality, leading to economic and health problems.
- The severity is rated at 8 because commerce is stopped. The frequency is 5/20 years, and it lasts for about 1 month, affecting 100% of the community.
- Increases water-borne diseases. Severity is at 7 because everyone suffers. Over the last 5 out of 20 years, diseases have affected people for 3-4 months.
- When flooding occurs, schools are also affected. When the river floods, schools become inaccessible, and classes are closed.

Hurricanes:

- Affect mental and physical health. Without adaptation, stress and anxiety levels rise. The severity is high. In 3/20 years, hurricanes have occurred, affecting for 180 days.
- Increase fatalities and water-borne diseases like cholera, malaria, dengue, and diarrhoea. The severity is 5. Hurricanes have affected the population for 180 days in 3 out of 20 years, impacting 100% of the population.
- Decrease nutrition and health, preventing children from attending school. The severity is 7, and the frequency is 3 out of 20 years, affecting for about 30 days or a month. This impacts 25% of the population, mostly children.
- The population has increased in recent years, but new residents do not construct homes. There are more people but fewer benefits rather than an increase in the number of households.

GROUP NUMBER 2: Natural Environment

Fire:

- This vulnerability has affected the fertility of the soil, loss of income, impacts productivity because time is spent combating fires instead of working.
- Risks include the increase in poverty, less food. The severity of fire in Valley of Peace would be a 7, and the frequency is 7/20 years.

Flooding:

- Food security, increase in investment for infrastructure.
- The quality of produce decreases.
- Issues with transporting produce. The lifespan of produce decreases since it takes longer to harvest.
- When there is flooding, people working in tourism, such as cave tubing, need to stay home and cannot go to work.
- People no longer want to plant in the same areas when flooding happens.
- Topsoil gets washed away, and fertility decreases. Risks involve an increase in poverty. The severity is 5, and the frequency is 10/20 years.

Heat:

- Water scarcity, affecting river levels and potable water.
- Higher health risks. Less working hours in the field.
- The germination rate of seeds decreases because of heat.
- Increase in agricultural inputs: more fertilizers, pest incidents increase, and hence the cost of production increases.
- When it is too hot, people use more fans, leading to increased electricity use and higher utility bills, requiring more investment.
- There is also a loss of food and jobs, with people working fewer hours. Additionally, people get discouraged from working in agriculture and seek better opportunities elsewhere.

Hurricanes:

- Loss of homes

- Classes need to be closed
- Businesses need to be closed
- Loss of produce: livestock and agricultural produce.
- More investments in fixing homes and clearing debris after hurricane destruction.
- Loss of educational opportunities: When classes are closed, students cannot attend school.
- Risks include the loss of belongings. Hurricane debris becomes fuel for future fires. We may lose our harvest, and people need to take loans to invest in farming again. The severity would be 7, lasting for 8 days.

Droughts:

- The impacts are like those of flooding: “”
- Health issues.
- The quality of produce decreases.
- The severity would be a 7, and the frequency is very often but not noted down.

GROUP NUMBER 3: Natural resources

Heat Waves:

- Less water availability.
- Water is too hot for plants.
- Sickness in plants after the first rain.
- Risks: Loss of agriculture, poverty, which would also increase crime. The severity would be 8. This occurs frequently: 10/20years, lasting about 4 months (approximately 120 days).

Fire:

- Loss of wildlife.
- Hunters kill injured and more vulnerable animals. If we do not adapt, we suffer from hunger and poverty. The price of produce increases, and if we can't afford it, we need to look for other options. The severity is 10. The frequency is 10 out of 20 years, lasting about 4 months.

Droughts:

- Causes an increase in fires.
- Pollination by bees decreases. If we do not adapt, animals and plants die.
- The environment does not become healthy.
- Decrease in employment opportunities. The severity would be 9, occurring 10 out of 20 years, and lasting for about 6 months.

Flooding:

- Soil becomes more prone to sickness and diseases.
- Water becomes more contaminated.
- Erosion of soil increases.

- The severity of this would be 4 since not all places become flooded due to the terrain. This occurs 5 out of 20 years, and the duration is 15-30 days for the land to settle and drain.

Hurricanes:

- Plants do not develop well, animals need to migrate, the population migrates and is lost. (Loss of habitat). Severity would be 6. Occurred 6/20 years, lasting 3 months to replant and recover from hurricane loss.

The Community Climate Change Plan is a comprehensive strategy designed to combat the adverse effects of climate change. It involves active participation from various community members, each bringing their unique perspectives and expertise. The plan includes developing early warning systems for climate-related disasters, implementing water conservation techniques, promoting sustainable land-use practices, and enhancing community awareness and education on climate change impacts. Today's activity is a critical step towards achieving our common goal of a resilient and sustainable community.

- By all individuals present: members of FD, important representatives in the community such as social workers, teachers, village chairman, waterboard committee members, cooperatives in the community
- BMFT: what community surrounds it, and along which communities is the reserve working with
- The program itself constates of 3 programs: agriculture, community outreach
- What is community climate change plan? Today's activity will assist in reaching one common goal as it will entail different perspectives of different members of the community
- The first activity is to identify vulnerabilities of climate change:

Minutes of the validation workshop

- Meeting notes: [VOP meeting notes.docx](#)

Valley of Peace Community Climate Change Resilience Plan

Date: November 6th, 2024

Location: Valley of Peace Community Center.

Facilitated by: Elma Kay, Ermain Requena, Sayuri Tzul, and Yahira Urbina

Meeting notes

1. Community members mentioned that **Coyotes are a pest in the agriculture field.** These scavengers feed on most vegetable products such as watermelon, cantaloupe, cucumbers and other fruits. There is a significant **economic loss** due

to the coyotes. Farmers are curious about the best practices to control the increase of the coyote population.

2. Participants also mentioned that deforestation affects the equilibrium in the ecosystems. Recently there has been an explosion in pest population and they assume it's due to the intense deforestation and the effects of wildfires along with climate change.
3. Participants mentioned that some consideration should be provided to **analyze how Climate change affects the consumers population**. They mention that when vegetable products are scarce there is an increase in prices resulting in consumers paying more or buying less due to the exaggerated increase in price.
4. Due to climate change, there has been a steady **increase in investment in agriculture**, especially in synthetic inputs such as fertilizers, fungicides and herbicides, increasing the cost of production in vegetable products.
5. Community members and stakeholders discussed the opportunity of **adding value to products**. Valley of Peace community is known for producing large volumes of vegetables such as tomatoes, sweet pepper and onions. They would welcome an opportunity to receive **training in Agro-processing** and learn about preserving these products to make sure shelf life is increased.
6. They would like to follow up will **BELTRAIDE** on business or training opportunities for entrepreneurs.
7. The agriculture teacher from VOPA mentioned the opportunities for farmers to have a niche market at the local school to **supply school feeding programs** with fruits and vegetables.

The community members agreed to invest funds in a **water bowser and shade** to assist schools, health centers, and farmers with water during the drought. The equipment will also be used for fire management in the community.

Agreement for the implementation of the Valley of Peace community climate-smart plan priority activities

AGREEMENT FOR THE IMPLEMENTATION OF THE VALLEY OF PEACE COMMUNITY CLIMATE-SMART PLAN PRIORITY ACTIVITIES

- a. This Agreement is established between the Belize Maya Forest Trust (the Organization), a non-governmental entity dedicated to showcasing a model of healthy, biodiverse forests that is both locally relevant and globally acknowledged,

and the **VALLEY OF PEACE VILLAGE** (the Stakeholder Community). The Organization has committed to providing the Community with a project grant aimed at enhancing the livelihoods of its members and bolstering climate change resilience. In turn, the Stakeholder Community has consented to accept the project grant in accordance with the terms and conditions outlined in this Agreement. The Project implementation period will be from **November 30, 2024, to March 31, 2025**.

- b. **Community Project Description:** Following the validation workshop conducted with members of the Stakeholder Community, it was determined that access to water and uncontrolled fires constitutes a significant climate-related challenge that impacts the health, environment, and livelihoods of the entire community. The participants reached a consensus that the introduction of a water bowser would provide immediate assistance in water distribution, particularly in anticipation of the forthcoming dry season. The allocated grant is intended for the construction of a **600-gallon water bowser, shade, and basic firefighter equipment for six people**, which will function as a vital water distribution system for the community during periods of drought, and uncontrolled fire prevention and suppression thereby mitigating issues related to water scarcity and potential fire emergencies. The financial support will encompass the expenses associated with materials, equipment, and labor, totaling **BZD 22,000**. The Organization will make payments directly to the suppliers. The Stakeholder Community will inform the Organization immediately of any change to the community climate change resilience plan priority list.
- c. The Stakeholder Community will support the Organization's initiatives in their community, including through capacity building and outreach events such as, but not limited to, knowledge exchange, workshops, summits, school engagements, field trips, national events, and local events.
- d. The Organization will provide project management and other related technical support for the Stakeholder Community Project where possible.
- e. The Organization can conduct site visits and follow up on the Stakeholder Community Project, including:
- Any progress or setback relative to the Project
 - Significant challenges and how they were dealt with
 - Any other Project modification or achievement

Inventory: Maintaining a comprehensive inventory of resources and finances related to the investments in the Project is essential for evaluating the Stakeholder Community Project's effectiveness and viability. This includes but is not limited to record keeping in respect of usage records, resources inventory, etc. The Stakeholder Community is encouraged to keep such records to demonstrate the success and impact of the Project. Any such records shared with BMFT will only be used to evaluate the success and impact of the Stakeholder Community Project and will not be shared with any other party without the consent of the Stakeholder Community leadership.

Publicity: The Organization is allowed to document and publicize the Project's implementation through different forms of media, that is; notices, press releases, research, websites, reports, photos, videos, informational pamphlets, site visits, in both print and online platforms.

Amendments: Any amendments to this agreement must be in writing and will not be effective until executed and approved by the same parties who executed and approved the original grant agreement.

By signing below, the Stakeholder Community of Valley of Peace accepts and agrees to all terms and conditions outlined in this agreement. Upon receipt of a signed agreement, the Organization shall execute the community project grant award.

For the Organization

For Community Council Leader