

PURPOSE PAPER

CLIMATE CHANGE

PLANT  WITH PURPOSE
FOR PEOPLE & PLANET

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INTRODUCTION

Globally, the increased burning of fossil fuels, destruction of natural habitats and biodiversity, and contamination of formerly unpolluted ecosystems have been the hallmarks of human-caused climate change, with the consequences becoming increasingly visible across the world. The volatility of weather patterns, increased severity of wildfires, and devastating impact of hurricanes and droughts on communities represent only a few examples demonstrating the global threat of climate change¹. In response, an increased sense of urgency towards climate action is developing, with responses ranging from individual activism, public demonstrations, and campaigns such as Race to Zero, in which cities, regions, businesses, investors, and universities have committed to achieve net zero carbon emissions by 2050². A united front against climate change is emerging from different stakeholders all across the world.

As an organization working at the nexus of environmental restoration and poverty alleviation, Plant With Purpose sees the devastating consequences of climate change first-hand in the communities where we work. As a Christian organization, we recognize the moral urgency of addressing climate change as an expression of our commitment to be stewards of God's creation and to care for the most vulnerable.

We understand that environmental degradation and poverty are inextricably

linked. While climate change affects the whole world, the communities who disproportionately suffer from inhospitable climate conditions are among those with the highest poverty rates³. Approximately 84% of the global poor live in rural areas where they are more vulnerable to environmental shocks⁴. This means the majority of people affected by poverty rely heavily on the condition of their land for their livelihoods. The effects of climate change, like unpredictable rainfall or extreme natural disasters, make poverty much more difficult to overcome. Through our partnerships in highly-affected watersheds across eight countries, we are supporting the development of resilient communities capable of both managing the worst impacts of climate change and mitigating its causes.



We also understand that climate change is not only an environmental or economic issue, but an issue of faith. Because in the Bible God calls us to love our neighbors, seek justice, and serve those in need, taking actions to mitigate climate change and build climate resilience are ways to express our faith and be part of a

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larger reconciliation. We believe that the church should be the world's preeminent force in eliminating poverty and all expressions of suffering associated with it, from disease to maternal mortality to homelessness, as well as displacement, food insecurity, deforestation, and climate vulnerability. With climate change among the most severe threats to the health, peace, and security of vulnerable populations, addressing climate change is a unique opportunity to fulfill our scriptural calling to serve those in poverty.

Plant with Purpose and the smallholder farming communities with whom we partner recognize the increasing urgency of climate mitigation and climate resilience. In this Purpose Paper, we aim to share how Plant With Purpose's approach, focused on the three pillars of environmental restoration, economic

empowerment, and spiritual renewal, contributes to climate adaptation and mitigation. We will share the lived experiences of partnering farmers, who have faced and continue to face many challenges, but remain resilient through environmental shocks, restore the health of their watersheds, and grow in their love of God and their neighbors. In the words of Maria Luisa, a partnering farmer from the Peñoles watershed in Mexico,

“through God, we can do everything.

There are things we can do with our little trees and our projects that will shape the future of our families.”

As an organization, our ultimate source of hope is rooted in God's provision and loving care for creation, which calls for regeneration and restoration. Together, we can heal our environment and work as a unified global community towards justice.



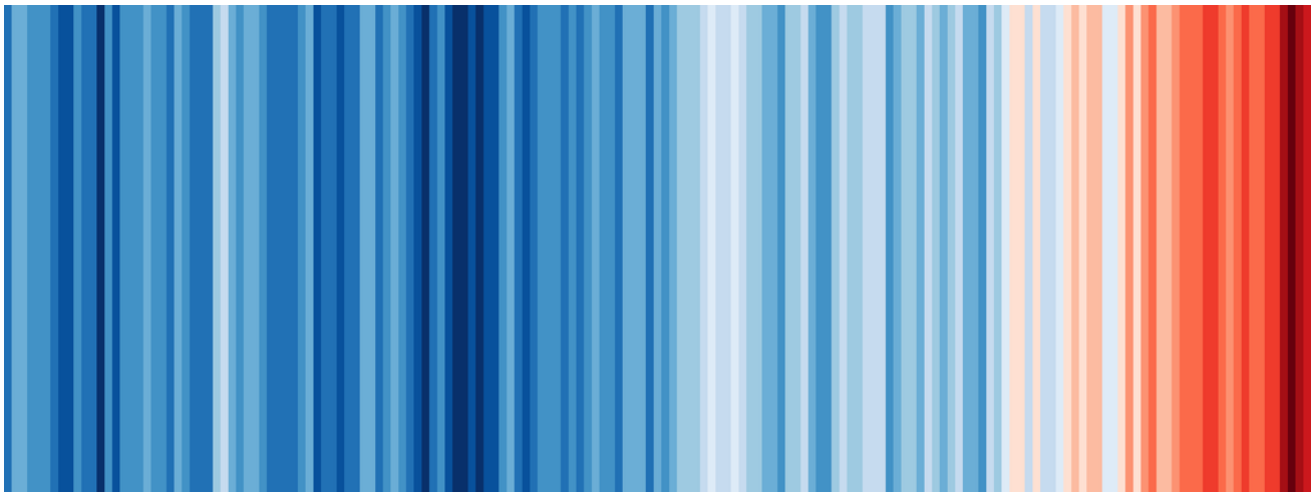
1

THE CHALLENGE OF CLIMATE CHANGE

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Climate change is defined as a long-term shift in global or regional climate patterns, often referring to the rise in global temperatures from the mid-20th century to the present⁵. This past decade from 2010-2019 was the hottest on record, with average global temperatures reaching record-high levels, driven by carbon dioxide and other greenhouse gas emissions that trap heat in our atmosphere⁶. Global deforestation—in which critical resources that protect wildlife and store immense amounts of carbon are lost—accelerated in 2020 by nearly 7% compared to 2019, exacerbating climate change⁷.

For the smallholder farmers with whom Plant With Purpose works, climate change is an issue of present survival. The consequences of climate change, such as intensified heatwaves and other extreme weather events, directly affect crops, forest cover, and farm productivity. While commercial farmers are able to mitigate climate-related fluctuations using methods such as irrigation and chemical inputs, the vast majority of farmers we work with are subsistence farmers dependent on rain-fed agriculture. Irregular rain patterns mean that communities can no longer plan around ideal planting and harvest seasons, threatening their food security. Hurricanes and erosion from intense weather events can wash away entire farms, and a lack of rain during droughts greatly reduces crop yields. For these communities, climate change can mean famine and death.



The "Warming Stripes", originated by Ed Hawkins in 2018, showing the warming progression of global temperature patterns from 1850 to 2018. The colors indicate how much that year's average temperature deviated from a chosen temperature baseline.

Several examples of climate related threats present in a few of Plant With Purpose's program countries include:

Climate vulnerability in the Democratic Republic of the Congo.

The Ministry of Foreign Affairs in the Netherlands ranked the DRC as the 12th most vulnerable country to climate change and the 5th least prepared out of 181 evaluated countries⁸.

Unprecedented dry seasons and drought in Thailand.

Shortages in rainfall and extended dry periods caused the country's water reserve to fall by 24%, decreasing rice yields and causing significant challenges for local farmers, making it increasingly difficult to feed their families.

Extreme weather and deforestation in Haiti.

Perhaps the most immediate threats to climate stability in Haiti are weather disasters such as hurricanes and cyclones associated with climate change. Meanwhile, agroecological malpractice has resulted in mass deforestation, severely limiting smallholder resilience to weather events, further exposing them to the fatal risks of flooding and landslides.



A woman is shown from the back, looking towards a lush green forest. She is wearing a blue wide-brimmed hat with a white polka-dot band and a blue vest over a teal long-sleeved shirt. She is holding a small pine sapling in her right hand. The background is a dense forest of green trees under a blue sky with white clouds. A solid green semi-circle is in the top right corner.

2

THE HOPE FOR RESTORATION

THE HOPE FOR RESTORATION

Smallholder farmers suffer the effects of both local degradation and global climate change as seen in food insecurity, inconsistent rainfall, vulnerability to natural disasters, and the persistence of drought. In light of these serious challenges, Plant With Purpose works alongside local communities to build climate resilience through acts of climate adaptation and mitigation. Climate adaptation refers to action taken to manage the risk of climate change impacts. Climate mitigation refers to action taken to reduce the deleterious human behaviors that contribute to climate change. The intersecting environmental, economic, and spiritual pillars of our holistic approach empower farming partners to not only cope with the consequences of climate change, but also restore their surrounding environments.

Climate Adaptation

- Promoting crop diversification to overcome threats to plant health posed by climate change.
- Improving partners' capabilities to store and access water as rainfall becomes irregular.
- Promoting biointensive agriculture to help improve crop growth in spite of the food insecurity caused by climate change.
- Implementing the construction of various soil erosion barriers and erosion-preventing techniques, as climate change increases the likelihood of flooding.
- Creating firebreaks and reducing the destructive potential of wildfires that become increasingly threatening with climate change.

Climate Mitigation

- Promoting conservation agriculture to enhance the carbon absorption capabilities of soil.
- Reducing destructive environmental practices, like field burning.
- Reversing the pattern of deforestation, which threatens some of the earth's most vital carbon sinks.
- Planting over 5 million trees yearly, that can store increasing amounts of CO₂ as they mature.
- Teaching the creation of organic fertilizers and repellents, to reduce the use of chemical alternatives and enhance the soil.
- The promotion of agroforestry incentivizes farmers to plant more trees by demonstrating the economic benefits of healthy forests.

A multi-year study by Plant With Purpose staff of smallholder farmer groups in the Dominican Republic and Haiti demonstrates multidimensional evidence of community resilience to system-level shocks, such as those imposed by climate change⁹. In it, a diversity of agricultural practices within a community was shown to be a key indicator of climate resilience.



3

ENVIRONMENTAL RESTORATION

CLIMATE RESILIENCE THROUGH ENVIRONMENTAL RESTORATION

Since Plant With Purpose's founding in 1984, environmental interventions have been fundamental in our approach to combating rural poverty. Through our interventions, especially as relates to regenerative agriculture and reforestation, rural communities are empowered to better adapt to climate-related shocks and sequester carbon. By way of climate mitigation and adaptation, our interventions combat soil infertility, drought, deforestation, extinction, pollution, and habitat loss.



To help farmers adapt to the challenge of food insecurity caused by climate change, Plant With Purpose teaches regenerative farming techniques such as biointensive agriculture to enable families to grow more food. Partnering families see an average 37% increase in crop yields. To cope with the intensified

natural disasters brought about by climate change, PWP teaches soil conservation and soil health techniques to protect farms from erosion.

One farming partner in Burundi, Michel, shared the different techniques he learned through Plant With Purpose:

“From lessons learned during the sessions, I have been able to implement the preparation of agroforestry and indigenous tree nurseries, fruit trees with grafting, best practices for managing kitchen and vegetable gardens, composting and mulching.”

Michel has seen how these techniques have made a difference for himself and his family, explaining

“Just to give you a comparison: before my corn field that produced 150kg now gives 400kg. The vegetable plots and kitchen gardens are planted with tomatoes, amaranth, onions, aubergines, beetroots, celery and many others. Now I can feed my children with an adequate and balanced diet.”

Partnering farmers who practice these sustainable agriculture techniques not only increase their ability to weather environmental shocks but also mitigate climate change through carbon sequestration. Some of the land use based activities that are most effective at absorbing atmospheric carbon include reforestation and soil conservation.

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Our reforestation efforts primarily revolve around agroforestry, where farmers plant trees alongside crops in a manner which limits soil erosion and diversifies farms. These trees serve as carbon sinks, pulling CO₂ from the atmosphere¹⁰. To date, we have planted over 47.2 million trees and counting, paying special attention to local species as well as the capacity of the communities to maintain a healthy tree population, leading to higher survival rates and greater benefit to the local environment.

Soil is also an integral component of climate change mitigation. Considerable evidence from the agronomy community shows how carbon, if integrated properly into soil systems, can be stored and used by plants for hundreds to thousands of years, as opposed to decaying back into the atmosphere if left on the surface¹¹. At Plant With Purpose, teaching and encouraging the use of methods such as mulching and creating organic compost has helped partnering farmers return more productive biomatter into the soil, intensifying the soil's ability to absorb and retain greenhouse gasses. Hillside farmers, who often suffer from massive erosion events due to erratic rainfall or intense weather events, benefit from using protective measures against soil erosion such as gabion walls and contour planting. These prevent the loss of topsoil as a vital carbon sink, and help farmers suffer fewer losses in their crops from hurricanes and floods.

Historically, Plant With Purpose partnering farmers have been using these techniques alongside other environmental restoration practices to promote carbon sequestration and restore their watersheds. We estimate that partnering farmers contribute to the sequestration of around 5-6 tons of CO₂e annually¹². In 2020, in partnership with REGID, Plant With Purpose conducted a remote sensing biomass carbon study in Tanzania which indicated that, conservatively, the partnering watershed experienced an increase in biomass carbon six times that of a control site. These results are very exciting, and we continue to explore partnerships and funding to better measure our carbon sequestration and to advocate for climate mitigation activities. Taken together, the restoration of forests, soil, and waterways as interconnected systems helps ensure the wellbeing of communities most exposed to the realities of a changing climate.



4

**ECONOMIC
EMPOWERMENT &
SPIRITUAL RENEWAL**

CLIMATE RESILIENCE THROUGH ECONOMIC EMPOWERMENT AND SPIRITUAL RENEWAL

At first glance, economic empowerment and spiritual renewal may not seem as tied to issues of climate change as other activities mentioned here, but Plant With Purpose views these two pillars as foundational in building climate resilience. Economic empowerment and spiritual renewal are essential because these interventions provide individuals and communities with both the ability and motivation to address their climate-related challenges.

The economic benefits of implementing sustainable agriculture techniques encourages participation and local buy-in, as planting trees is not only environmentally friendly but also beneficial in increasing yields and diversifying sources of income. As mentioned previously, implementing sustainable agriculture techniques leads to increased yields, which provides families with more food and crops.

Additionally, Plant With Purpose works in building financial stability for farming partners through savings-led microfinance activities in Purpose Groups. In each village's Purpose Group, community members come together, pooling together savings and providing small loans to one another.

These families build a financial safety net and are more resilient through various crises, both climate and non-climate related. Compared to nonparticipants, the average Plant With Purpose participating family has two times more savings, which allows them to prepare for emergencies and plan for the future.



Economic empowerment builds the financial stability and material resources needed by individuals to weather environmental shocks. Further, caring for the earth can be a byproduct of one's renewed faith. Bernice, a multi-year participant in Plant With Purpose Burundi, reflects that

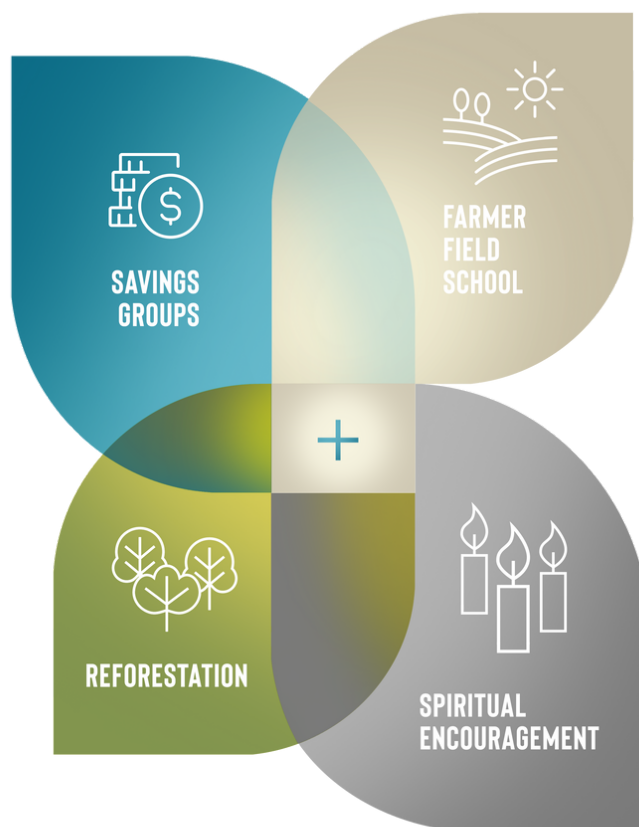
“now we understand what it means to serve God. We have learned that in order to live in harmony with God, we must first respect His creation.”

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Our movement for restoration can lead us towards actions that support a healthier climate. As rural communities understand their work as a means to glorify God, the stewardship of creation becomes a priority.

With financial and spiritual needs having been met, our partners are better able to attend to community-level ailments like conflict and dependency. As relationships are restored, entire communities benefit. We have seen examples of neighbors sharing food and goods to help one another after flooding devastated a watershed in Thailand. We have heard farmers in Oaxaca express a stronger sense of purpose by identifying themselves as caretakers of creation and community leaders. Communities that fortify the values of unity and love build solidarity, which can provide social support and resilience during environmental shocks and ongoing climate-related stresses.



4

A man and a woman are sitting on the ground in front of a wall made of reddish-brown bricks. The man, on the left, is wearing a grey t-shirt, dark trousers, and striped socks. The woman, on the right, is wearing a colorful patterned dress and a matching headscarf. They are both looking towards the camera. The background features two wooden doors set into the brick wall. The ground is dry and dusty with some sparse vegetation.

5 MULTIPLYING OUR IMPACT & CALL TO ACTION

MULTIPLYING OUR IMPACT

Plant With Purpose not only focuses on work with smallholder farmers, but directs that work to feed into a larger Watershed Model whereby entire subwatersheds experience regeneration. By working with about half the population in a given watershed, there is a ripple effect on land and communities as impact spreads. Using our Watershed Model to holistically engage the multifaceted needs of rural communities, our programs integrate environmental, economic, and spiritual considerations to build climate resilience. While the features of resilience are salient anywhere that we implement our programming, the effects that resilient communities can have on their environment are amplified with careful, data- and context-driven decision making.

Where we work, indications of poverty and environmental health improve beyond the populations involved in Purpose Groups, and participants report strengthened communities and a greater sense of involvement among their neighbors. With our partners, not projects, we have found a methodology to catalyze locally-led leadership on issues of faith, finance, and environment.

CALL TO ACTION

With impact reports that demonstrate a 55% reduction in poverty and net increases in vegetation and crop yields, Plant With Purpose has seen that environmental healing and sustainable community development are within reach. Even fairly

simple efforts to protect parts of the planet are rewarded abundantly by the Earth's resilience. Creation is designed for life and abundance, and when we act out our faith by showing respect for life and practicing stewardship and responsibility, we can see the effects.

As a leader in shaping attitudes towards creation and environmental stewardship within the American church, Plant With Purpose aims to use its influence to motivate this community towards compassion through climate action. A United States citizen emits around four times the amount of CO₂ as a person from Thailand, or 535 times the amount of CO₂ as someone from the Democratic Republic of Congo¹³. The American church plays a vital role in influencing both policies and behavior, and we can make a meaningful impact on the climate crisis through our contributions to environmental conversations in this most important cultural hub.

While environmental restoration is not entirely dependent on our efforts and ultimately dependent on God's abundant provision, we also believe that every individual is given the precious opportunity to work alongside each other and steward God's creation. This is true for not only farmers and church partners, staff, and communities in our international programs, but also each individual in the United States. We can all play a part in combating climate change through changes in our decisions, habits, and consumption.

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Plant With Purpose calls for the following bold actions from individuals and organizations:

Educate yourself.

Learning about climate change and the experiences of vulnerable communities facing environmental challenges builds up empathy and understanding and helps us make informed decisions on how to address these issues.

Support and serve those most marginalized and vulnerable to climate change.

Plant With Purpose has witnessed the resolve of rural smallholder farmers to positively impact their lives and communities in the face of climate change, and invites others to support the flourishing of these communities.

Talk about it.

The majority of Americans are willing to listen to people they care about discuss climate change, even if they don't fully accept its existence or consequences¹⁴. Brave the discomfort and reach out to the people in your life whose climate attitudes you can affect.

Amplify the conversation.

Dialoguing with others, engaging in the public discourse about climate change, and demonstrating collectively to motivate public figures helps spread awareness of issues and potential solutions regarding climate change.

Take regeneration personally.

Find ways to regenerate the Earth through personal actions such as reducing family carbon emissions, preserving and protecting local ecosystems, and honoring and upholding those among your community for whom the practices of environmental stewardship are culturally tied.

Plant With Purpose recognizes the plurality of choices one can make to contribute to a more sustainable, climate-resilient world. Ultimately, we call for the empowerment of those willing to align their values with their actions, be they in the United States, the rural communities across the many diverse watersheds we serve, and anywhere else in God's creation. With this spirit, urgency, and God's grace, we can live out what it means to love our neighbors in the face of climate change.

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