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From Vulnerability to Resilience: Case Study on Swayam Shikshan Prayog's Women-led Climate Resilient Farming Model

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ABSTRACT

The Women-led Climate Resilient Farming (WCRF) model is a novel approach that seeks to empower women in farming communities and promote sustainable and climate-resilient agricultural practices. The WCRF model is designed to help small and marginal farmers transition from water-intensive cash crops to food crops, from chemical to bio inputs, while also promoting soil and water conservation, and diversified and resilient livelihoods through farm-allied businesses. The model aims to empower women through improving access to land and advocating for their cultivation rights, increasing their financial independence, and promoting natural resource management.

_VO**IS Planet** portal primarily focuses on environmental sustainability covering various aspects: **Low carbon, Renewable energy usage** and **E-waste management.**

It is aimed at aggregating and helping co-create knowledge and information on environmentally responsive behaviours and concurrently pursuing result-oriented social media campaigns to encourage people and specifically the youth, to take proactive actions in promoting sustainable lifestyle and creating a positive impact on the environmental ecosystem in their surroundings

By: _VO**IS Planet**

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1. INTRODUCTION

The detrimental effects of climate change on agriculture have been getting harder to ignore in recent years. Rising temperatures, changing precipitation patterns, and increased frequency of extreme weather events are affecting crop yields and quality, altering the distribution of pests and diseases, and increasing the likelihood of soil degradation and desertification. These effects are leading to food security concerns, and posing challenges for farmers and communities who rely on agriculture for their livelihoods. As a result, understanding the impact of climate change on agriculture is crucial for developing effective adaptation and mitigation strategies to ensure sustainable food production in the future.

The Women-led Climate Resilient Farming (WCRF) model is a novel approach that seeks to empower women in farming communities and promote sustainable and climate-resilient agricultural practices. This model in India has been developed by Swayam Shikshan Prayog (SSP), a Pune-based NGO that has been at the forefront of addressing the challenges faced by small and marginal farmers in drought-prone regions such as Marathwada in Maharashtra. SSP's efforts in helping women farmers adopt climate-resilient and sustainable agricultural practices have been recognized by the Global Center on Adaptation (GCA), which awarded the "Local Adaptation Champions Award" to SSP in the 'capacity and knowledge' category at COP27 in Sharm El-Sheikh, Egypt.

The WCRF model is designed to help small and marginal farmers transition from water-intensive cash crops to food crops, from chemical to bio inputs, while also promoting soil and water conservation, and diversified and resilient livelihoods through farm-allied businesses. The model aims to empower women through improving access to land and advocating for their cultivation rights, increasing their financial independence, and promoting natural resource management.

This case study aims to capture the processes, mechanisms and outcomes of WCRF model towards raising awareness about the model and to encourage the support of similar models in the future.

It will address three main research questions:

1. What strategies does SSP use to support women farmers?
2. What are the successes and challenges of these strategies?
3. What has been the impact on the local community?

2. CONTEXTUAL ANALYSIS

2.1 AGRICULTURAL SCENARIO IN INDIA

Agriculture is a crucial sector of the Indian economy, contributing to around 20 and providing livelihood to more than half of the Indian population. The agricultural sector in India has been constantly evolving over the years, and has undergone significant transformations in the past few decades. The country has made significant progress in increasing food grain production, improving crop productivity and adopting modern agricultural practices. However, the sector still faces various challenges such as inadequate infrastructure, insufficient investment, limited access to credit and technology, and fragmented landholdings.

India is one of the largest producers of food grain in the world, and is self-sufficient in food grain production. The country's total food grain production was estimated to be around 314.51 million tons in the financial year 2021-2022. The government has been implementing various initiatives to increase agricultural productivity and enhance the livelihood of farmers. The Pradhan Mantri Fasal Bima Yojana, the Pradhan Mantri Krishi Sinchai Yojana, and the Soil Health Card Scheme are some of the initiatives aimed at improving crop productivity and ensuring better returns to farmers.

India is a significant player in the global agricultural market and is among the top 10 exporters of agricultural products in the world. According to the Ministry of Commerce and Industry, the country's agricultural exports were valued at US$ 50.21 billion in the financial year 2021-2022. Agricultural exports from India include a wide range of products such as spices, cereals, fruits and vegetables, dairy products, and processed foods. The government has been promoting exports by providing various incentives and facilities to exporters.

Despite the progress made in the sector, agriculture in India continues to face various challenges. Farmers also face issues related to the fluctuating prices of agricultural produce and the lack of adequate storage and transportation facilities. The government has been implementing various measures to address these challenges, such as increasing investment in the sector, promoting public-private partnerships, and providing credit and insurance facilities to farmers.

2.2 THE ROLE OF WOMEN IN AGRICULTURE

Women in India play a significant role in agricultural activities and contribute to the economic development of the country. In recent years, the Indian government has taken various initiatives to empower women in agriculture and recognize their contributions.

According to the National Sample Survey Organization (NSSO), women constitute around 43% of the total agricultural labor force in India. Despite their significant contribution, women in agriculture face numerous challenges, including limited access to resources, lack of education and training, and social and cultural barriers. These challenges affect their productivity and ability to earn a decent livelihood.

The government of India has implemented various programs and schemes aimed at empowering women in agriculture. For example, the Mahila Kisan Sashaktikaran Pariyojana (MKSP) provides women with training and support in agricultural practices, access to credit and market linkages, and other resources. The scheme has been successful in increasing the participation of women in agriculture and improving their economic status.

In addition, the government has launched various initiatives to provide women with access to credit, such as the Mahila Samridhi Yojana, which provides women with loans for agriculture and other livelihood activities. The government has also introduced schemes to promote gender-sensitive agriculture, such as the National Agricultural Insurance Scheme for Small and Marginal Farmers, which provides insurance coverage to women farmers.

However, despite these efforts, women in agriculture in India continue to face numerous challenges. For example, a majority of women in agriculture are illiterate, and lack access to education and training. In addition, they often face discrimination and unequal treatment in access to resources and credit.

To address these challenges, it is essential to increase the visibility of women in agriculture, and recognize their contributions. This can be done through the implementation of gender-sensitive policies and programs, and by providing women with access to education and training opportunities. In addition, it is important to increase women's participation in decision-making processes, and provide them with equal access to resources and credit.

2.3 THE NEED FOR CLIMATE-RESILIENT AGRICULTURE

Climate resilient agriculture is the practice of growing crops and livestock that are adapted to local weather conditions, and are able to withstand changes in those conditions. With global temperatures rising and the frequency of natural disasters such as hurricanes, droughts, and floods increasing, it is becoming increasingly important for farmers to adopt these practices in order to feed a growing population and ensure food security.

The Intergovernmental Panel on Climate Change (IPCC) projects that global temperatures will continue to rise and that precipitation patterns will change, leading to more frequent and intense extreme weather events. These changes will have a significant impact on agricultural production, including decreased crop yields, increased crop failure, and increased vulnerability to pests and diseases. The impact of these changes will be felt most acutely in developing countries, where the majority of the world's food is produced and where many people are already food insecure.

According to the United Nations (UN), climate change is already affecting food production and causing food prices to rise. The UN projects that by 2050, food prices could increase by as much as 84%, affecting hundreds of millions of people and exacerbating global poverty and hunger. In order to mitigate the effects of climate change on food production and security, it is imperative that we adopt climate-resilient agricultural practices.

Climate-resilient agriculture involves a range of practices, including crop selection, water management, soil conservation, and the use of drought-resistant seed varieties. For example, crop selection can involve choosing crops that are well-suited to local weather conditions, and that are able to withstand changes in those conditions. Water management can involve the use of drip irrigation and other water-saving technologies to conserve water, and reduce the risk of crop failure due to drought. Soil conservation can involve the use of cover crops, composting, and other practices to maintain soil fertility and improve soil health.

Benefits of climate-resilient agriculture

At a global level, it can help to ensure food security for millions of people, reduce poverty and hunger, and help to mitigate the effects of climate change on agriculture and food production.

Hence, the need for climate-resilient agriculture is clear and pressing. Climate change is already affecting food production and food prices, and it is likely to become an increasingly significant challenge in the years to come. Adopting climate-resilient agricultural practices is essential if we are to ensure food security, reduce poverty and hunger, and mitigate the effects of climate change on agriculture and food production. It is time for governments, farmers, and consumers to take action and work together to ensure a sustainable future for agriculture and food production.

3. THE WORK OF SWAYAM SHIKSHAN PRAYOG

3.1 OVERVIEW OF THE SSP AND ITS MISSION

Swayam Shikshan Prayog (SSP) is a non-government organization based in Pune, India, founded in 1998 by Prema Gopalan and Sheela Patel. Its aim is to empower women in low-income, climate-threatened communities to attain self-reliance and self-sufficiency. The organization's mission is to build robust partnerships that support women-led entrepreneurship and leadership in sustainable development.

Over the past 24 years, SSP has had a significant impact on the lives of over 300,000 women farmers, entrepreneurs, and leaders across seven states in India, reaching over 6 million people. The organization addresses climate change by addressing food security, access to health services, water, and sanitation, increasing incomes, creating jobs, boosting local economies, and advocating with the government.

The organization's name, "Swayam Shikshan Prayog," which translates to "self-learning and experimentation," reflects its approach to empowering women. SSP has been recognized by the United Nations Development Program and the United Nations Framework Convention on Climate Change for its work.

SSP has a rich history of responding to natural disasters, including the Gujarat earthquake in 2001, the Tamil Nadu tsunami in 2004, floods in Bihar in 2007 and Kerala in 2018, and is currently working extensively in three states: Kerala, Bihar, and Maharashtra.

3.2 IMPORTANCE OF WOMEN-LED CLIMATE-RESILIENT ORGANIC FARMING

Marathwada in Maharashtra has long faced an agrarian crisis, with farmer suicides being a common issue. One of the major causes of it is the preference for growing resource-intensive cash crops like sugarcane or cotton in a drought-prone region. Erratic rainfall and market forces have resulted in repeated failed harvests, leading to mounting debts, distress migration, and hunger.

In 2012-15, the area was surveyed by SSP, and it was found that farmers were planting a single cash crop, putting them at risk if there was a climate-related disaster. To address this problem, food security was identified as the most pressing need, and economic empowerment was seen as the solution. Women, who make up 79% of agricultural labor in the state, were not recognized as farmers by the government due to a lack of land titles.

The SSP's climate-resilient farming model promotes growing 6-8 food crops per season using natural inputs, with women encouraged to gain cultivation rights on a small piece of land for the family's consumption. The model also emphasizes training and use of natural seeds, fertilizers, and pesticides, leading to savings, improved health, and conservation of water and soil. Women are seen as ideal candidates for this model, as they understand the food and nutrition needs of the family, and are able to take decisions on what to grow. They also have traditional knowledge of livestock management and are concerned about the health of the family, making them committed to using organic inputs.

The key components of this model include the use of biofertilizers and pesticides, preservation and exchange of local seeds, diversification from single to multiple food crops, increased number of crop cycles, water-efficient crops, stress on water conservation using micro irrigation, and diversifying into agri-allied businesses. Most farmers feel that this approach has improved soil quality and productivity, as well as reducing water usage.

3.3 THE WOMEN-LED CLIMATE RESILIENT FARMING (WCRF) MODEL

The Women-led Climate Resilient Farming (WCRF) model, also known as the "one-acre farming model," is designed to support small and marginal farmers in regions like Marathwada who are facing food insecurity and vulnerability to climate change due to dependence on chemicals, and shift towards cash crops. These farmers also face serious economic, social, and ecological issues due to water scarcity and low irrigation.

WCRF empowers women farmers to become resilient leaders by adopting a climate-resilient approach in agriculture that focuses on four key areas: Market Linkages, Federating Women Farmers, Technology Integration, and Water-Efficient Micro Irrigation Models, promoting sustainable practices. Women farmers are targeted as they are more focused on food security and nutrition, making them more open to the message. This leads to improved productivity, increased income, enhanced family health, and built resilience. Women make crop decisions and have control over their income and savings.

WCRF teaches water-resilient practices without chemical fertilizers and pesticides, helping increase agricultural productivity in drought-prone areas known for farmer suicides. It encourages crop diversification, increased crop cycles, and title rights on small pieces of land. By keeping women at the center, the model transforms them into agents of change in agriculture, promoting resilient livelihoods.

SSP has developed a unique model to empower rural women from small and marginal farmer households. Despite their significant contribution to agriculture through time, labor, and knowledge, these women are often only seen as agri-laborers and are not recognized as farmers. In this model, SSP aims to transform these women from laborers to leaders in agriculture over four seasons.

During the onboarding process, SSP clubs the selected farmers into 20-member informal groups at the village level to provide training and learning opportunities through a participatory approach. By the final season, these groups graduate to become producer groups.

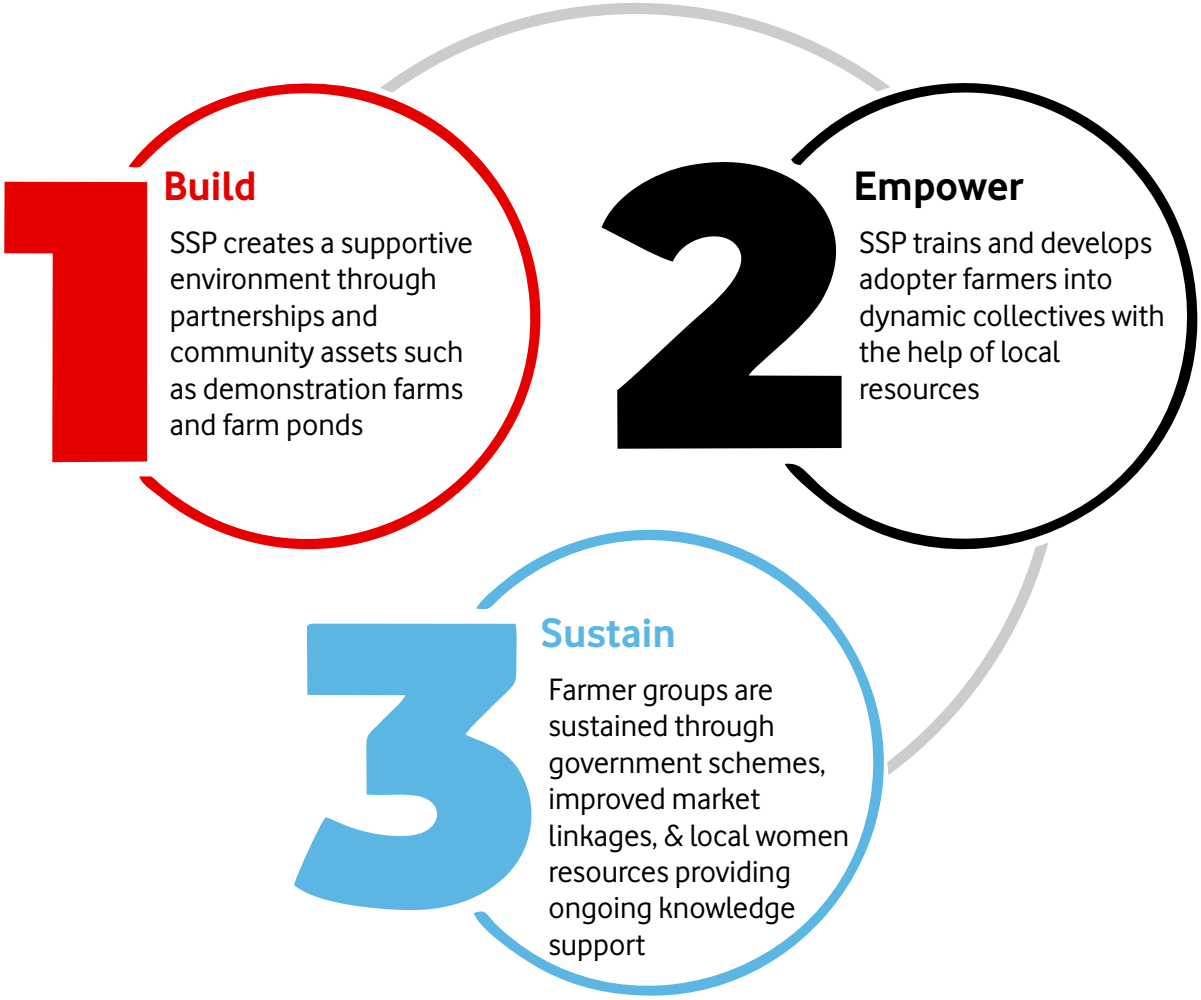
In the first two seasons, the new adopters gain cultivation rights on a small piece of land and acquire the knowledge and skills to cultivate seasonal food crops. They use low-cost, eco-friendly, and locally available materials for seeds, fertilizers, and pesticides and integrate livestock for bio-inputs. This helps to address the family's food and nutrition needs.

In the following season, the adopters typically expand their land and increase their production enough to have a marketable surplus after self-consumption. They are also coached on how to start and run farm-based enterprises, such as bio inputs, poultry, dairy, goat rearing, etc., to increase household income.

In the fourth and final season, SSP assists the adopters in gaining legal land title, which helps them to access government schemes in their own name. The informal farmer groups created at the start of the program are mentored to register with ATMA and continue to access government schemes. They are also coached on how to start farmer-producer companies to run collective businesses.

An enabling ecosystem has been designed with the government, agri-tech partners, training partners, and knowledge and resource partners to empower women through farm literacy, decision-making abilities, access to land, and leadership skills. Krishi Samvad Sahayaks (KSS) play a central role in disseminating the model, and serve as a constant link between the model ecosystem and women farmers. They act as educators and provide information about cultivating food crops, such as millets, cereals, pulses, and vegetables, using mixed cropping patterns.

The WCRF operating philosophy of SSP



3.4 REACH AND SCALING-UP

In the last seven years, 65,000 women farmers and households have begun the shift towards climate-resilient farming in 750 villages across Osmanabad, Latur, Solapur, and Nanded districts of Maharashtra.

This model is currently in the process of scaling up to Jalna, Ahmednagar, and Aurangabad districts and also to Bihar and Kerala states in India. This program has transformed 8,800 Acres of farmland by growing food crops using exclusive bio-inputs. The unique cascading approach in the ground deployment of the model makes it scalable, replicable, and efficient.

Through this process, SSP is also organizing the women farmers into collectives and providing support to gain land rights so that they take up new roles as leaders and entrepreneurs, and develop partnerships with the government to lead sustainable community development.

3.5 PARTNERSHIPS AND COLLABORATIONS

SSP has established partnerships with both the government and agri-tech companies to further its goal of improving the livelihoods of farmers. In 2015, SSP worked closely with the Government of Maharashtra to expand the Mahila Kisan Sashaktikaran Paryojana (MKSP) program to reach 21,000 farmers. MKSP is a sub-component of the National Livelihood Rural Mission, and focuses on enhancing the status of women in agriculture.

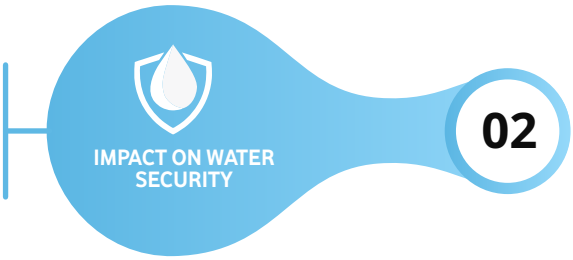
SSP also helps farmers access water stewardship projects through its partnerships with government programs. In addition to its collaboration with the government, SSP has formed relationships with several key organizations including UMED-Maharashtra State Rural Livelihoods Mission, Misereor Germany, Huairou Commission, Welthungerhilfe-GIZ, Hindustan Unilever Foundation, MacArthur Foundation, ASHOKA, HSBC, and NABARD. These partnerships have been instrumental in supporting SSP's mission to improve the lives of farmers and promote sustainable agriculture.

4. IMPACTS AND OUTCOMES

Swayam Shikshan Prayog has trained 300,000 rural women from across India in adapting to climate change through the WCRF Model. The model is being implemented in eight districts in Maharashtra and has delivered impacts in various key result areas:

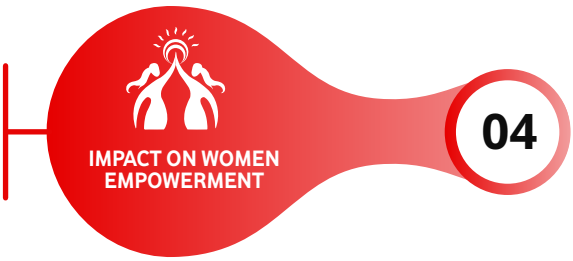
The WCRF Model leverages the innate wisdom of women in local food crops to secure food and nutrition for their families. As a result, the adopters of the model experience a 10-15% increase in the productivity of food crops and grow 15 different food crops on average. The model has promoted the growth of local and less water-intensive crops and the use of naturally available bio inputs to retain soil moisture.

The model has linked farmers to government schemes of micro irrigation and water harvesting models, which has led to 35-45% of the adopter farmers having drip or sprinkler irrigation or a farm pond.



The WCRF Model has reduced the cost of cultivation and enabled savings on market-bought food, diversifying livelihoods. 83% of the farmer adopters have started at least one additional farm-based business.

The model has enabled access to land title for 13% of the adopters and mentored 25% of the adopters to become agri-entrepreneurs. Women farmers have been able to own land and increase their earnings. The one-acre model has helped farmers transition from cash crops to food crops and organic farming practices, enabling them to become financially independent.



SSP has helped more than 75,000 women farmers negotiate with their families for titles to an acre of family land, which has been used to grow nutrient-rich crops. When that is not an option, some women have leased land from bigger farmers. The women have demonstrated that these plots can feed their families in times of distress, making them effective influencers. A marginal farmer in Osmanabad district, Uma Karad, has gone from earning Rs.50 per day as a daily wage worker to earning Rs.50,000 per month with a one-acre climate-resilient farming model.

As a result of the WCRF Model, there has been a marked improvement in women's health in the districts, with many women farmers stating that they feel healthier and more energetic. The hospital visits and medical bills of the women have also come down. Over 70% of families have started eating from the farm and families have noticed an improvement in their health, making adoption easier year by year. From 2016 to 2020, there were more than 100,000 small and marginal farmer households where women were cultivators.

5. LEARNINGS

One of the key learnings was the importance of educating families on the benefits of transitioning from traditional farming methods to food crops and promoting organic farming. Convincing them to give up a portion of their land for food crops was a challenge that required patience and perseverance.

Another crucial learning was the need to break down cultural barriers and change the perception that women are not capable of efficiently managing agriculture. Providing training and education to women and proving that they can become capable leaders in the agricultural sector was critical. Over time, this approach not only improved food security for families but also made a significant impact on the community as a whole.

Initially, the NGO faced resistance from some members of the community who were wary of the focus on women and not involved in the process. However, the organization's persistence and determination eventually won over the community. As a result, the organization now receives a warm welcome from the community, who have seen the positive impact on their families and quality of life.

Overall, the NGO's approach of empowering women through education and training has been a valuable learning experience. By promoting sustainable farming practices and breaking down cultural barriers, the organization has been working to create a brighter future for all.

6. CONCLUSION

In conclusion, the Women-led Climate Resilient Farming (WCRF) model developed by Swayam Shikshan Prayog (SSP) has been effective in empowering women farmers in drought-prone regions like Marathwada in Maharashtra, India. The model aims to promote sustainable and climate-resilient agricultural practices, with a focus on transitioning farmers from water-intensive cash crops to food crops and from chemical to bio inputs. SSP has a rich history of addressing the challenges faced by small and marginal farmers, and its efforts have been recognized by the Global Center on Adaptation, which awarded the organization the Local Adaptation Champions Award at COP27.

The study aimed to understand the strategies and impact of the NGO and its WCRF model. The organization's mission is to empower women in low-income, climate-threatened communities to attain self-reliance and self-sufficiency, and it has had a significant impact on the lives of over 300,000 women farmers, entrepreneurs, and leaders across seven states in India. The study addressed three main research questions, including the strategies used to support women farmers, the successes and challenges of these strategies, and the impact on the local community.

The key components of the WCRF model include the use of biofertilizers and pesticides, preservation and exchange of local seeds, diversification of food crops, increased number of crop cycles, and water-efficient crops. Women are seen as ideal candidates for the model, as they have traditional knowledge of food and nutrition, livestock management, and are committed to using organic inputs. The model has led to improved food security, access to health services, water, and sanitation, increased incomes, job creation, and boosted local economies, and has had a positive impact on the local community.

Overall, the study highlights the potential of the WCRF model to promote sustainable and climate-resilient agriculture and the importance of empowering women in farming communities. The NGO's work and the success of its model have important implications for other regions facing similar challenges and should be encouraged and supported.

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