**What story can Small Island Developing States (SIDS) tell on addressing the relationship between poverty and climate change**

**Collection of contributions received**

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# Topic note

The [Small Island Developing States (SIDS)](https://sustainabledevelopment.un.org/topics/sids/list) share unique and particular vulnerabilities, resulting in a complex set of environmental, food security and nutrition challenges. With the adoption of the Sustainable Development Goals (SDGs), countries have renewed their commitment to fight poverty[[1]](#footnote-1) , hunger and malnutrition. Climate change constitutes a fundamental threat to achieving those goals and tackling climate change and climate-related events would be key for moving people out of poverty and help achieve SDG 1 (No poverty). SDG 1 pays special attention to building resilient livelihoods and helping the rural poor reduce their exposure and vulnerability to climate change and natural disasters. This is critical to secure lives and livelihoods, income, and to improve food security and nutrition.

SIDS are particularly vulnerable to climate change and other external shocks. They are likely to face increased vulnerability to shocks and stresses, if their adaptive capacities and ecosystem services are eroded.

These vulnerabilities and threats have been highlighted by the [SIDS Accelerated Modalities of Action (S.A.M.O.A.)](http://www.sids2014.org/index.php?menu=1537) Pathway. Climate change impacts pose a threat to food systems which exacerbate high prevalence of food insecurity among the SIDS Community. In response to this, as described in Paragraph 61 of the S.A.M.O.A. Pathway, FAO has been requested to coordinate the development of [The Global Action Programme (GAP) on Food Security and Nutrition in SIDS](http://www.fao.org/3/a-i7297e.pdf), in close collaboration with the [United Nations Department of Economic and Social Affairs (UN/DESA)](https://www.un.org/development/desa/en/) and the [UN Office of the High Representative for the Least Developed Countries, Landlocked developing countries and Small Island Developing States (UN-OHRLLS)](http://unohrlls.org/).

According to the GAP, “pro-poor growth and development policies and strategies are needed to increase the ability of poor people to take advantage of, and benefit from “the opportunities that these new instruments, such as the S.A.M.O.A. Pathway and the GAP, provide. This includes measures that target and address key sources of vulnerability and deprivation, and strengthen adaptive capabilities.’’ Furthermore, the GAP emphasizes the importance “that interventions, programmes, and services aimed at social and economic empowerment of communities, and at addressing food security and malnutrition in target groups, are underpinned by enabling political, institutional and social environments.’’ Achieving poverty eradication and food security and nutrition as a path to adapt to climate change will, according to the GAP programme, have a “multiplier effect on sustainable development.’’

Learning from SIDS on how they cope with climate change related impacts in these respects, could be instrumental to not only other Small States but also to the rest of the world. Their adaptive ways and mechanisms, despite their small size in land mass, could be instrumental to other regions and countries with relation to the nexus on poverty and climate change in coastal areas.

This forum aims to get perspectives from SIDS about the connection between poverty and climate change. The results gathered here will feed into an ongoing work to support countries to address the interrelation between poverty and climate change in coastal areas, coastal communities and SIDS. It also aims to provide concrete ideas for countries on how to better approach this relationship in their climate change and development agendas, thus feeding into and improving the dialogue and exchange of expertise between SIDS as well as with non-SIDS countries, and the overall south-south cooperation.

Overall, this discussion aims to gather the approaches and strategies used in SIDS to adapt to climate change, while building resilience of the most poor and vulnerable. Particularly, its purpose is:

1. To learn how SIDS are reducing the exposure of the poor and most vulnerable people to climate change and climate related events.
2. To learn about pathways, tools and challenges, including recommendations for effectively building adaptive capacity to eradicate poverty and achieving food security and nutrition within the context of climate change.

**To help gather these lessons, we invite you to share your experience and views by replying to the following questions:**

1. Can you share examples of actions that are being undertaken to reduce poverty, food insecurity and nutrition challenges in response to climate change and climate-related events? Actions can range from informal to formal and include social protection and multisectoral policies, projects, programmes, activities, among others.
2. What lessons have been drawn from building resilience and adaptive capacity of poor and vulnerable people in the context of climate change and climate-related events?
3. What are the challenges of reducing poverty and inequalities and building the adaptive capacity of the poor and vulnerable to climate change and climate related events?
4. What should the world learn from these experiences? What are the plausible pathways and good practices you would recommend to follow when addressing poverty, food security and nutrition in the context of climate change and climate-related events?

We thank you very much in advance for your time and inputs and look forward to an engaging exchange.

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| --- | --- | --- |
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# Contributions received

## Patrick McConney, Barbados

**What is your SIDS Region (Pacific, AIMS or Caribbean)?**

Caribbean

**Give examples of what actions you are undertaking to reduce poverty, food insecurity and nutrition challenges in response to climate change and climate-related events? Actions can range from informal to formal and include social protection and multisectoral policies, projects, programmes, activities, among others.**

Context is necessary. My interests and actions mainly concern research and outreach in marine small-scale fisheries (SSF) and marine protected areas (MPAs). Most are project linked and hence short-term. They have included:

· Promotion of the global SSF Guidelines at regional, national and local levels to strengthen policy

· Policy influence to include SSF and MPAs in regional climate policy and implementation plans

· Capacity development and empowerment through training, learning by doing, fisher exchanges

· Exploration with stakeholders of adaptive MPA governance options to enhance system resilience

· Understanding fisherfolk perceptions of climate and poverty, and views on risk and resilience

· Examining what fisherfolk do to cope with, or adapt to, new perturbations such as sargassum

· Looking at the links between fisherfolk networks, food security and marine resource governance

**What lessons have you drawn from building resilience and adaptive capacity of the poor and vulnerable people in the context of climate change and climate-related events?**

Some lessons have included:

Fisherfolk normally accept high levels of risk; so understand why rather than make assumptions

Building adaptive capacity is a long-term process more suited to programmes than projects

Conservation interests such as environmental NGOs can unintentionally undermine resilience

Applied academic research needs to be coupled with outreach and advocacy to have an impact

Fisherfolk have little stamina for policy influence as a long term undertaking; need early results

Rates of climate change and variability are likely to far outstrip adoption of adaptive governance

**What are the challenges you face in reducing poverty and inequalities and building the adaptive capacity of the poor and vulnerable to climate change and climate related events?**

Some of the challenges are:

· Gender, poverty and youth issues receive very little attention in fisheries and are not mainstreamed

· Low capacity for social science in fisheries and MPA authorities limits the types of matters addressed

· Few gender and poverty scholars have an interest in marine natural resource management issues

· Fisherfolk do not usually consider themselves poor although very sensitive to economic inequalities

Several other responses largely elaborate upon the experiences underlying the lessons learned. Much overlap.

**What should the world learn from your experience? What are the plausible pathways and good practices you would recommend to follow when addressing poverty, food security and nutrition in the context of climate change and climate-related events?**

Lessons learned are set out above. Some are generalizable, but others are more specific to Caribbean culture and social-ecological situations. Pathways are many and need to be adapted to the conditions at different levels on geographic, institutional, jurisdictional and temporal scales. A key principle is institutionalizing a culture of testing, monitoring, evaluating, learning and adapting to test again. Identifying plausible pathways and good practices leading to resilience or transformation for addressing the listed threats requires detailed knowledge of the specific situations to avoid or reduce collateral damage. The primary pathways are those that lead to adaptive capacity and enable improved self-organisation. Good practices need to be participatory but well-informed and strategically aimed at adaptation. Here, well-informed means sufficient to take a reasonable decision and assess the outputs and outcomes against an ideal. Further specifics require context.

## Ali Mohamed Ali, United Republic of Tanzania

1) My SIDS Region is AIMS.

2) Examples of action that are undertaking to reduce poverty, food insecurity and nutrition challenges in response to climate change and climate related events are:

* Established Disaster Management Policy for Zanzibar, a Disaster Management Commission/Department, and an Emergency Preparedness and Response Plan.
* Socio-economic scenarios

Future socio-economic development needs to be considered alongside the future impacts of climate, because these changes – such as population growth, the size of the economy, land-use development - will affect the potential size of future climate impacts (e.g. the number of people potentially affected, the number of people living in flood zones, etc.).

* Climate Screening MKUZA II

This considers how climate resilient existing plans are, identifies any changes that are needed, and can assess whether existing plans are taking advantage of the potential opportunities for low carbon or adaptation finance.

* Implementation of Home School Feeding Program. This program implemented in schools that have the Most Vulnerable Children. In this program the children are given millet porridge and yellow sweet potatoes with vegetables.
* Implemented MWANZO BORA PROGRAM at the selected Districts. This program implemented at selected Districts based on children under malnutrition and their parents are in poor household income. In this program the selected households have given knowledge on capacity building focusing on food security and nutrition. Also they provided capital for establishment of vegetable home garden.

3) The lesson drawn are:

* More effort is needed to be practiced in the issue of climate change and climate change related events in order to ensure that we can minimize the poverty and food insecurity in all level.
* There is shortage of knowledge to the community regarding to the climate change, food insecurity and nutrition particularly at rural areas.
* The strong and close collaboration is needed between climate change stakeholders and community focusing all issues regarding to climate change, poverty and food insecurity.
* Up to now most people unable to understood the correct time for practice agricultural activities related to climate change.

4) The challenges that faces in reducing the poverty and inequalities and building the adaptive capacity of the poor and vulnerable to climate change and climate-related events are:

* High number of poor and vulnerable children who need close assistant, services including basic need and social services.
* Lack of awareness and insight to the community particularly for climate changes events.
* Shortage of commitment for leader in all level, there is no special strategies that indicated how they take action on all matter concern the climate events, poverty and vulnerability.
* Shortage of financial.
* Lack of equipment such as motor cycles or vehicles.
* Poor infrastructure especial at rural areas.

5. a) The World can learn the following from my experiences:

* A participatory approach is very important in introducing and solving the issues of poverty, food insecurity of climate change and climate-related events.
* Involvement of all stakeholders is all level is very important in addressing the issue of poverty, food insecurity nutrition climate change and climate-related events.
* Knowledge on food security, nutrition and climate change and climate-related events is still needed in the community.
* The poverty line in Zanzibar is 30.4% where most of these people found in rural areas.
* There is shortage of forecast knowledge to the most people in the community regarding to climate change and food security.

b) The possible pathways and good practice that I can recommend to follow when addressing poverty, food security and nutrition in the context of the climate change and climate-related events:

* Providing capacity building to the community.
* Enhancing institutional support networks.
* Increasing household food production to the community.
* Increasing food trade and market chain.
* Increasing income opportunities to the community.
* Educate people on climate change related to food security.
* The questions are clear and will trigger peoples’ interest and participation.

## Katinka Weinberger, UNESCAP, Thailand

Our SIDS region is the Pacific.

Nature-based solutions for Pacific cities: Integrating seascapes and landscapes for sustainable coastal settlements and communities.

Marine habitats have always been essential for human life. They provide food, building and crafting materials for urban livelihoods, and less-known services such as coastal protection, nutrient cycling and pollution filtration and need to be protected because of their ecological, economic, and social value. Unplanned urban expansion into marine and coastal ecosystems is an issue that countries cannot afford to ignore. Tackling this issue requires addressing the complexities of the marine and coastal environment in urban planning and development through initiatives that provide co-benefits for sustainable development, such as nature-based solutions.

Nature-based solutions are living solutions inspired and supported by the use of natural processes and structures, and are designed to address climate change and various environmental challenges in an efficient and adaptable manner, while simultaneously providing economic, social, and environmental benefits (European Commission, 2015). The core idea is to use the benefits of ecosystem services to address challenges a system faces and create additional benefits. For instance, rehabilitating coastal vegetation such as mangroves and seagrass beds (in combination or instead of built environment solutions) reduces coastal erosion and increases resilience against flooding, while sequestering carbon and providing habitats for wildlife that are central for coastal livelihoods. Types of interventions relevant to Pacific settlements include: ecosystem restoration, greening of grey surfaces (e.g., green rooftops, green walls or greened brownfields), and integrated broad scale climate change mitigation and adaptation measures, e.g., natural flood control through eco-engineering for green infrastructure. Nature-based solutions founded on ecological principles can reduce the impacts of rapid unplanned urban development on natural habitats. However, applications of “blue-green” infrastructure remain largely untested at large scales in the Pacific.

New designs, building strategies and spatial planning that integrate seascapes and landscapes are an opportunity for both ocean-friendly cities and experimentation for the development of successful blue-green technologies. Eco-engineering remains under-utilized in the management of marine urban sprawl in the Pacific partly due to the fragmentation of policies and incentives driving ecologically sustainable development below the waterline. In response to these issues during the launch of the Ocean Pathway championed by Fiji at COP23, UN ESCAP pledged its support for building resilience and protecting ocean health in coastal island settlements from ridge to reef. UN ESCAP is embarking on a new initiative in partnership with the Pacific Centre for Environment and Development (PACE-SD) housed at the University of the South Pacific (USP) to strengthen the capacity of Pacific SIDS member States to develop and apply an integrated policy approach for ocean-friendly and climate-responsive urban development adapted to island systems.

To learn more about this initiative please contact: ESCAP-EDD-SUDS escap-edd-suds@un.org

## Brandon Eisler, Nutritional Diversity, Panama

A few humble thoughts and observations from Isla Colon, Panama a Caribbean Region, with a permacultures’ perspective to contribute to ; What story can Small Island Developing States (SIDS) tell on addressing the relationship between poverty and climate change?

Island life inherently calls for a certain amount of sustainability.  On the island where the Nutritional Diversity study in Bocas del Toro, Panama is located, having a water tank and a septic system is a necessity. The central distribution of water in the community comes on once or twice a day, and water is often collected in a storage tank (5$ bucket to 500$ plastic) of your own to have it at your home tap all day long. Many home tap water pressure is aided with a home water pump (150$). If one cannot afford a human waist septic system they will go into the ocean or behind a tree. Unfortunately, I told by local residents even large hotels are at times responsible for significant waist spills into the waters just right there at the beaches.

The ex-pat, tourist communities that come from where these garbage products are created do most of the humanitarian work to clean it up on the Panama island beaches and unfortunate dumping sites from my brief observations. The island has greatly benefited (in most eyes) from tourism and expatriotism. Still many will say that further development along this path will end up being too much and the quality will slide down a degree from a peak quality of life marker.

This particular Island boasts many benefits, such as no storms, insulated calm archipelago waters, and during the last cycle of damaging hurricanes the island experienced minor storm weather.

Sudden booms in population, and large ship traffic and boat traffic around the town of Almirante, Panama where much of the Chiquita Banana crop was once farmed, with large port equipment installations has created water quite toxic in its bay. Water is essential to all human life and always has been this community has surely suffered greatly it is water condition.

Many local people feel a certain level of resentment to the foreign occupation of their country that almost mirrors them is population size now. It's hard to say if foreign influxes motivate new hopes or ideas.

Small Island Developing States (SIDS) Sustainable Technologies:

Barbados was a big customer of home roof top water heater systems. The system has a 500 gallon tank and compression, vacuum tube heaters and ends up being 6 foot by 4 foot roughly and be very careful, the water coming out of this tank is hot! I have not seen this here yet.

Barbados is different than normal volcanic earth island terrain, it is a surfaced natural water purifying reef. The locals simply drill into the reef and disposes waist into it. Coastal water there was as clean as can be and the run distilled there, is famously some of the best here is. Barbados is the only other island I have had the pleasure to visit in the Caribbean.

Local growing here on Isla Colon is limited mostly to papaya, platoon, banana, pineapple, and yucca cassava, and surprisingly few people grow things, and when they do , they often grow a small amount, Some growers will have guandu, some more exotic tubers, sandias, zapio, potatoes, tomatoes, celery and perennial vegetables, etc. In the area of the islands of Bocas del Toro, Panama and abundance of incredible foreign entities

Well water, and spring installation is unknown to most of the residents.

Panama however struggles with unfortunate waist spills and dumps that collect in her harbours. Septic waist processing, with leech fields and composting toilets are used many times for septic waist. The archipelago features a warm protected waters, places that dolphins accumulate etc. However, also when toxicity enters the water from the town, it can be around for a few days.

[Well Made Educational programs that show families how to receive immediate benefit from sustainable and permaculture practices](https://www.patreon.com/educationinpermaculture) could be seriously beneficial. People here I have noticed love the cell phones, they love the video age. Video delivery of permaculture information intheri language and other languages can lead to a more smart, diverse and capable community.

It could be a long shot culturally, but a stern thought is that integrated 'humanuer' processing systems could do great for small permaculture, sustainable properties. These types of larger plant site, type installations can be made for only double the cost of what is common now.

On a home level, Permaculture experiments and farms have narrowed the process to a well defined functional and sanitary process with excellent results as fertilizer for plants. It is almost a motivation to be healthy so that more healthy foods are created for the plants they love on their small farm.

Again, [permaculture](https://nutritionaldiversity.com/permaculture/) has the answers within it is doctrine, to solve a host of issues for a communities quality of life. Combined with solar, and developments like the Tesla battery, a modern, compartmentalized, sustainable community is very achievable.

Considering the power for people to motivated most by what effects them most, I have myself determined that [Nutritional Diversity diet](https://nutritionaldiversity.com) education, should be a top priority worldwide. [Get involved](https://www.patreon.com/educationinpermaculture).

I can offer the observation also from this Bocas del Toro Island experience over the last 6 years that, between tourist and retired foreigners the growth and modernization of the island has been exponential. I can offer the right [place to stay for your trip to Bocas del Toro](https://www.airbnb.com/rooms/9758597) to make sure you get the permaculture experience, at a small but very special, and dedicated study place of different permaculture and tropical farming evolutions as well as Nutritional Diversity food techniques and study.

There have been many like us, foreign relocaters, and students of the tropical nature that have inspired a lot of cool and helpful study in the realms of sustainable living and combined with the incredible talents of the locals, such as chainsaw and wood working, and thatched roof making, very sustainable happy joint communities can be established, and a friend of mine there Henry, on one of the surrounding islands is a perfect example of local family and foreign family integration and appreciation.

Many young talented locals have benefited enormously from foreign sponsorship, and the increase of foreign population and tourists. The knowledge levels of people and the facility of local technologies such as Wi-Fi and local TV station, have been impressive to witness.

The Board of Tourism and many local offices here and across Panama has done a great job keeping things nice, marketing for tourism, and supporting a solid steady development.

The cultural barrier between Panama's natives and it is new comers is a pretty thick one. One side or the other may be good and putting a nice face to things, but time charity, and miracles will be most likely to see a more accepting and appreciative attitudes across the devide. I think it is everyone's observation that the developed world is on it is way to develop Bocas del Toro.

## Florence Egal, Food Security and Nutrition expert, Italy

Let me share a few considerations, which I realize are fairly simplistic and not very original. By and large, plantation systems have drastically changed SIDS initially subsistence-based economies. Plantation workers and their households became increasingly dependent on imported foods and progressively abandoned traditional foods and local varieties. The environment impact of plantations was not factored in and local communities lost access to land.

As a result, SIDS now face all forms of malnutrition (and in particular diet-related non-communicable diseases), the environment is degraded and biodiversity eroded, communities are disempowered and poverty is on the rise. Tourists are fed imported foods and it is difficult to find local fruits in market or supermarkets. And in isolated islands in the South Pacific when the boat does not come, food insecurity becomes a problem. Water levels rise and hurricanes and cyclones are on the increase.

Re-localizing food systems, including sustainable management of local biodiversity (often more resilient to prevailing climate hazards), in order to make best use of the island natural resources and revive local food cultures, seems an obvious starting point to shorten food chains and diversify diets, facilitating consumer access to and supplying local markets with fresh and micro-nutrient rich foods and identifying and promoting niche (and organic/seasonal?) products, to provide job and employment all along the food chain, contribute to local economies and overall contributing to SIDS resilience.

## Lal Manavado, University of Oslo affiliate, Norway

Let me begin by identifying the justifiable areas of pragmatic action we may undertake under the ægis of FAO to address the issue. But before we can make our first move, we run into two very thorny problems. First, achieving a more or less common notion of poverty, and the second, what are the actual poverty-inducing mechanisms one may justifiably associate with climate change in our target area?

In many a discussion on this forum and elsewhere, I have emphasized the obvious unjustifiability of using any economic yardstick to measure poverty, for it is based on unstated assumption the human beings are mere numbers devoid of needs common to all people of flesh and blood. I have tried to bring about the awareness that all economic activities and value tokens like money have no value in vacuo, but they acquire a value commensurate with their instrumentality in enabling man to satisfy any one of his six fundamental needs.

Let me offer an extreme example. Imagine a man with sacks of gold coins marooned on a lush tropical island whose inhabitants have a superfluity of food and know nothing about gold coins, and are peaceful but not at all generous to strangers. On this mythical tropical paradise, our visitor will most likely perish of starvation, just like any other penniless waif in a big city during a harsh winter.

Why do not we consider the common cause of suffering and death of both, thwarted ability to satisfy the need for nutrition as a justifiable indicator of poverty? Clearly, having money alone could not have alleviated poverty in both cases. This may be rejected as based on an artificial example, but the assumption, having means to procure food ensures one an adequate nutrition is simply illogical. In addition to having the financial means, food will have to be available for purchase, and the purchaser will have to have the dietary and culinary competence needed to prepare it before one can address one’s need for nutrition.

Just a few more words on our remaining fundamental needs. They are health, education and security in their real general sense, procreation, and a set of non-material needs. The latter are so called, because their satisfaction does not involve any material gain whatsoever; æstetic enjoyment, taking part in games and sports, etc., are some of the means used to meet this need. Their importance to life is not equal in degree, but they all make a contribution to one’s quality of life as a human being.

Many navigators during the great era of exploration, and naturalists and anthropologists (Cook, Dampier, Malinowski, Bougainville, etc., etc.) have left us vivid descriptions of life on islands in the Pacific, while some mediaeval Islamic travelers like Ibn Battuta has given us a picture of life on the Maldives. Allowing for their individual bias (Malinowski was free of it); one cannot help but notice that those islanders enjoyed a higher quality of life during those pre-monetary days than they do now.

I postulate that this is because they cannot now satisfy those six needs as adequately as they did earlier, and it has nothing to do with economic wealth per se. Therefore, it is reasonable to postulate that poverty is one’s state of life when one is unable to adequately satisfy any one or more of our six fundamental needs. After all, many of us agree that there is such a thing as cultural poverty, not an uncommon state of affairs in many an affluent country.

However, FAO has a limited capacity to address all six manifestations of poverty, even though there is a complex link among them. For instance, lack of appropriate agricultural competence (derived from suitable education and training) may induce hunger induced poverty even when other necessary conditions to overcome it obtains. Likewise, a lack of proper health facilities may reduce both one’s ability to produce and/or procure an adequate supply of food. Hence, I will confine myself to poverty alleviation with respect to nutrition, particularly as it is affected by adverse climate change.

After narrowing down our efforts to the most relevant area of a possible way forward, let us look at some of the most important criteria any appropriate and successful action should meet. These criteria fall into two categories, viz., those that apply to non-producers of food, and those that their counterpart should meet. The former group includes politicians, administrators, traders, consumers as well as the food producers, while the second group only includes those who either produce or harvest (fishermen) food. Thus, the consumers overlap the producers, but the latter remains distinct.

From this it should be evident that unless both groups act in unison to achieve our common objective, use of no technological improvement in food production/harvesting per se could ever make a significant improvement in poverty manifesting as hunger or some form of malnutrition. And it will also be evident that appropriate action each group should undertake is distinct and different; while the first group undertakes enabling action, the latter ought to engage itself in actual food production.

Now I think this is our over-riding difficulty. Locally successful relevant projects are legion, but sadly, sustained nationally successful enabling efforts are hard to come by. Perhaps, FAO might begin to explore with greater vigour suitable ways of encouraging the national decision-makers to undertake sustained efforts to enable food producers to carry out their task with greater convenience and profit to themselves rather than to some middlemen.

After this necessary setting of the scene, let us get down to business, to be precise, dealing with the effects of adverse climate change on poverty that manifests itself as an inadequate ability to procure a varied and wholesome diet in a sustainable way. Here, we run into a bunch of variations. They fall into two distinct groups whose mutual dependence is somewhat one-sided. Let me explain this curious point.

While actions of the relevant decision-makers like politicians, administrators, etc., can easily have an enhancing or an adverse effect on mitigating the consequences of climate change on food production, even the most appropriate actions undertaken by the food producers or harvesters could alleviate poverty with respect to nutrition unless all the consumers in an island state are willing and able to act responsibly in unison. Also, it must be borne in mind that what constitute appropriate behavior on the part of general public shows a considerable variation. A non-exhaustive list of those will include the following reasons for this diversity:

1. Cultural variation; particularly with reference to food culture which can be ignored only at grave peril to the welfare of the inhabitants, for the bio-diversity on and around islands is highly vulnerable to the introduction of foreign species. This in turn, could only exacerbate the effects of climate change.

2. Water cycle that supplies its water and how it is retained is variable. For instance, Micronesia and Maldives depends on seasonal rains from a global weather system, which is retained in the ground by a stratum of lime stone. But islands like Tahiti and Pitcairn also receive water from rain through the interaction between mountains and moisture laden air resulting from the daily land and sea breeze.

3. In a considerable number of islands, fisheries are a vital source of food. But, the possibility of those edible fish living there depends on the health of the coral reefs on or around them. These have been criminally destroyed in several places through the use of Sodium Cyanide and dynamite, primarily to provide fish for markets in China and to a lesser extent, to aquaria in affluent homes in East and West.

4. Many fertile islands have been denuded of their trees turning them into semi-deserts, and when mountainous, rain water has carried away the top soil into the sea killing the corals around them. This has led to soil infertility on land and scarcity of fish on once rich waters. (examples: Madeira, Celebes now called Sulawesi, and all pacific islands where there are tourist hotels for Japanese now)

5. Danger of radio-active seepage from French and US nuclear tests, and still unremoved chemical weapons from the Second World War. Even though the focus of this threat is small, nobody can be certain of how living things will react to their long-term exposure even in small quantities.

6. Disproportionate non-native ownership of island property ostensibly to engage in activities to ‘boost’ the local economy. Unfortunately, many still believe in this modernish myth as GDP’s increase on glossy paper, while the local poor get poorer prey to alcohol, drugs, and lethargy losing the last of their possessions, viz., their dignity.

I hope that the foregoing will make it clear that it is difficult to recommend a simple set of best practices of universal applicability without doing more harm than good to our target groups. Obviously, this does not entitle us to remain inactive, and much can still be done. But, it is crucial to understand that our success depends on our willingness and ability to adopt a holistic approach that would embody simultaneous appropriate action by the various sub-groups in the two main groups, viz., the food consumers and producers.

Unfortunately for the islanders on some isles, it is not just the consumers on them who decide what they are able to do. International trade laws can often hamstring every suitable action towards greater resilience in food production and enhanced local nutrition. For instance, consider the case of Panguna copper mine on the island of Bougainville. A referendum is planned for 2019 to determine whether the island should become independent of Papua-New Guinea, and the inhabitants are now dependent on imported food purchased with money earned through the export of copper ore.

The rich flora and fauna on the island as described by the explorer after whom the island is named is no more. And gone are the traditional sources of food. So, nutritional dependence supported through ore export seems to be the only short-term solution. But, how adequate that nutrition would be, depends on international copper prices, and the willingness of the investors to put in money to the mine for the necessary maintenance and improvement. In view of the present politically unstable situation this remains dubious.

So, we need the real cooperation of consumer groups everywhere to help the islanders in two main directions. The reasons for this are very simple, for island climatic changes are mainly due to what happens elsewhere in the world. These events fall into two distinct categories; first, the natural cyclical changes in sun’s and earth’s movements, and fluctuations in solar activity, and secondly, human behavior throughout the globe.

Thus, nothing short of a coordinated and sincere global effort could halt the wide-spread suffering and degradation of island peoples, and help them on the way to regaining their dignity as human beings. Trade is certainly not the way there, for it has so far only led to exploitation and scarcely publicized cruelty and misery. It is not easy to remain unmoved if one is aware of the enormous injustices past and present, and how they are being glossed over even today. But, let us try to be objective lest we be labelled too unfashionable.

I will not go into the wide variety of measures each of us could take to improve our immediate environment, for they have been well publicized. But what we have failed to do is to mitigate some of the greatest hindrances to their wider application, which are beyond the power of the individual to overcome. After dealing with them in outline, I will try to make some general recommendations, which must be adapted to suit a given island’s climatic, geographic and food cultural norms. Under no circumstance should they be coloured by external trade considerations.

We are not born with even a trace of the knowledge and skills needed to enable us to live as civilized humans according to our cultural norms. These including those norms must be acquired through education in its inclusive sense as I have noted earlier in this discussion. At present, trend everywhere is to ‘tailor the individual’s education as dictated by trade and industry’.

This is called a ‘practical education’, but for whom it is most practical, obviously to the owners of industry and traders, is never emphasized. The poor student is made to believe that his interest and that of the trader or industrialist is the same, even though he is often no more than a mere hard-working automaton whose economic status is a far cry from that of his big boss. When you compare the proportional gains the two categories make, it is inevitable that the gap between the rich and poor will continue to increase even if other things remain equal.

But it is not in the mind set of traders and industrialists to keep the status quo. They are merely motivated by increasing their annual gains whether they are able to enjoy them within their life span or not. The principal tool used to achieve this desire for increasing gain is humourously called, “promoting economic growth” or “diversification of investment portfolios”, or even better, “re-location of production units”. The last wonder often leads to many job losses in the newly “de-located” country, and many a derelict factory.

Meanwhile, the country of ‘re-location’ (I will continue to use this semantic monstrosity, ‘re-location’ even though it needs only a vestigial intelligence to realise that one can only relocate something that has already been there and removed.) will begin to contribute even more to adverse climate change than the previous one for two reasons.

1. Building factories in otherwise virgin areas (country of re-location usually is.) leads to a greater imbalance in solar heat exchange between the ground and space than it did in the country of origin.

2. Owing to rather flexible standards of production often result in greater emissions of green-house gases and other toxic substances.

Recalling once more oft loudly supported ‘right to culture’, let us try to put into the test, for many a small island state, there seems to be no refuge from their current misery other than in reclaiming as much of their island norms as possible. Apart from a few unfortunate islands containing industrial raw materials like metal ore, petroleum, etc., there is no other practical choice. I wish to underline with greatest emphasis possible that turning them into artificial holiday resorts for the affluent foreigners is worse than the traditional colonialism. Turning islands into tourist camps of various kinds will make a few corrupt islanders, foreign food and drink suppliers, and foreign hotel owners rich, leaving the majority of the local people to work as minions for minimal wages to buy imported ‘food’. This horrid picture can be turned into impressive numbers showing economic boom! But for whom?

I hope that the discussion so far has made it amply clear that amelioration of adverse climate changes as they affects nutrition in small island states depends principally on the actions of the world outside, while some actions often undertaken by foreigners on them have a slightly less disruptive and land impoverishing effect. Let us now see what pragmatic actions might be carried out under FAO in order to mitigate them. These fall into two categories; first, the institutional endeavours that influence the various groups among the consumers, and secondly, field activities tailored to suit the conditions prevailing in specific locations.

Institutional changes:

1. Trade policies and legislation to halt further building of tourist facilities on small island states, particularly on beaches once covered by coconut palm, and encourage their gradual dismantling. Their effect on local solar heat exchange is dramatic, and its worst consequence is a greatly reduced monsoon rain fall on which islanders depend in many places. This change also affects sea temperature around coral reefs killing the coral with drastic results for local fisheries.

2. Institute policies and enforceable laws to ensure that the fishing fleets of technically advanced nations (especially Japan, China including Taiwan and Korea) adhere and respect the 200 Kn. Economic zones of the island states. Unfortunately sometimes, political corruption at home enables the technically but not ethically advanced nations to obtain permission to fish in those zones with the help of bribery. As far as I can see, continued media exposure seems to be the only way to elicit enough shame in the corrupting and corrupted nations to behave more responsibly.

3. World-wide checks and controls to ascertain and ensure that ‘re-located industries follow adequate guidelines on factory emissions especially when‘re-located’ in various categories of ‘developing countries’.

4. Instruments necessary to halt further global deforestation and initiate immediate environmental regeneration projects like planting native tree species in denuded areas, public spaces, along roads and highways, river banks; initiate research and development of roofing and external wall paint having similar thermal properties as grass or the tree canopy to achieve a solar heat exchange rate more or less similar to that of a natural habitat.

5. Encouragement of the use of appropriate technology that supports the full use of all renewable resources including human labour, and active discouragement of labour-saving methods for they benefit not the labour, but those who employ it. It is time the experts began to appreciate the simple fact that while labour-saving methods may boost the profits of the investors, it leaves fewer and fewer opportunities to the ever-growing global population for very few of them are able and willing to become experts or investors. Therefore, it would be wise to initiate family planning and economic devolution. One can make a start with some sound anti-trust legislation.

6. Empowerment of people everywhere through sound public education on the relationship between climate and our environment, and what each and every one of us could easily do.

Local actions to be adapted to suit specific needs:

1. Increase the local people’s awareness (especially among the younger generation) of how fragile is their environment owing to their limited natural biodiversity in flora and flora, and that of their marine resources despite its great diversity. Once this is understood, it would be easier for them to realise that some of the ‘old practices’ were based on sound scientific fact, and they were sustainable.

2. Refrain from introducing ‘improved strains’ for most islands (of course, there are some exceptions) has soil best suited for local cultivars that require no fertilisers, biocides etc. It is easier for the latter to be carried to the sea from islands causing great damage to fisheries.

3. Extensive replanting of local species of utility like coconut, sweet potato, yams, taro, some edible species of Pandanus (Papua New Guinea), etc.

4. Strict coast-line and coral reef protection and preservation for not only do the local fisheries, but also the safety of the coastal areas from marine erosion depend on them.

5. Use of the local building materials for housing and deprecating the use of corrugated iron and concrete for the purpose, for the latter entails the extra cost of cooling and the use of fossil fuel.

6. When a small island nation depends on mineral extraction as a main source of revenue as in Cyprus and Bougainville, it would be wise to establish some fund derived from the profits that may finance appropriate and sustainable agricultural projects with a view to the future.

I am sure that many other contributors will continue to offer many concrete projects while I have limited myself to the conditions they should meet, and to creating an atmosphere more receptive to what is good and sound in the past, and what is destructive and self-defeating in some of the highly advertised modern ways. Island youth might not know what price the affluent pay for their gleaming labour-saving machines and gadgets, but a short documentary on the incidence of obesity and consequent diseases, and money spent on ‘health studios’ and what they do there , should prove to be salutary.

I am afraid that I have been rather polemical here, but I am convinced that the plight of small island states is a problem they will never be able to address on their own, for it is a problem caused by the outsiders in the first place, and then, they were made dependent on outside powers. As most of them have little or no raw material needed by industry, this dependence is near total in some cases. On top of this, their environment is among the most fragile on earth, poor on land in diversity, but enormous in the surrounding seas.

So, one can only draw one logical conclusion; it is incumbent upon us to help, but not help to turn their shores into cheap tourist brochures while the once proud and independent islanders are left to perform menial tasks for tourists, but to help them to be independent from our interference, to make amends at least by supporting them to be once more free, and regain their dignity we deprived them for so long.

## Mermedah Moustache, Ministry of Fisheries and Agriculture, Seychelles

**Island state self-sufficiency.**

Sustainable development in general, implies that all three pillars of development that is, economy, society and environment must be sustainably and equitably resourced.

The same holds true for small island developing states (SIDS) but their conditions are quite unique and different from larger islands and other countries that form part of a continent. Whereas agriculture is very much an economic activity in continental economies, it is very much a social activity in islands and need to be treated as such. Social services such as health and education are highly subsidized by the state to meet the needs of the masses and the vulnerable. Although private clinics and private schools may exist to provide these social services, the state has an obligation to ensure that the whole of society has access to these services. In that light, if we accept that agriculture in SIDS is more of a social obligation rather than an economic activity, then we must design a framework to accommodate this sector at the national, regional and international arenas.

**Economy**

Many island economies including Seychelles depend on provision of services rather than exploitation of natural resources for economic growth. In many cases, the size of islands does not allow them to exploit natural resources to supply a large market such as an export market except of course fisheries products due to the vast EEZ of many islands. The EEZ of the Seychelles is some 1.4 Million SQ. KM. Some islands have developed niche markets for specialized products manufactured from the use of the islands unique resources. If these resources are not carefully managed, they are soon depleted. As a result the general trend is that small islands depend on tourism, financial services (and off-shore banking), industrial fisheries to grow the economy and in return import most of the food requirements.

Island populations are small in size and population, they have limited land area and much of the available man power is absorbed in the main economic sectors leaving very little for the development of other sectors such as agriculture, health or education. These islands therefore depend heavily on imported labor even for the economic activities but also on imported basic food, clothing and shelter materials. It is worth noting however that some SIDS have done very well for themselves in terms of economic growth. Some SIDS fall in the high income or high middle income brackets such as the Seychelles and Mauritius in the Indian Ocean, Barbados and Trinidad and Tobago in the Caribbean and Fiji in the Pacific yet they are plagued by nutritional challenges due to consumption of foods that lead to diet related diseases.

**Social and society**

Many SIDS are chronically affected by many of the social ills that affect larger countries, they have some of the highest global statistics on non-communicable diseases and incarceration rates. They are plagued by drugs, prostitution and broken or dysfunctional families. In an attempt to keep the small economy buoyant, very little financial resources are available for allocation to the support of social infrastructure (both hard and soft). Food and agriculture however is if special interest whereas agriculture is very much and economic activity in larger countries including larger islands, it is not the case in SIDS. In small societies, agriculture is very much a social support mechanism which is required to counter act the many negative impacts of importation of food.

Natural disasters

 In the event of natural disasters including climate related disasters, SIDS are really at the mercy of the importers since food reserves are minimal and there is rapid turnover with interspersed periods of no stocks at all. If ports/airports are destroyed and badly damaged by a natural disaster and the local production is insufficient to cover the transition or recovery period then a social disaster may occur.

**Environment**

 Seychelles tourism rest upon the image of a pure, natural, clean environment and in order to maintain this image much resources including financial resources are used for environmental conservation activities. These activities could be made much more sustainable if the aspect of livelihoods through the use of the natural resources could be developed. Environmental conservation in Seychelles today is led mainly by state activities and non-government organizations (NGOs). Initiatives such as agroforestry and agro tourism are still very much in the pilot phases. Huge investments are made in conserving the environment but very little emphasis is placed on sustainable use of natural resources which could help to address the issue of agriculture and food security in SIDS.

For any SIDS to be self-sufficient it must be able to sustainably and adequately provide energy water and food to its population.

**Energy**

Many SIDS depend almost entirely on fossil fuels for energy production, very few produce fossil fuels and of those that do, yet fewer are able to refine locally. It is therefore necessary that SIDS develop alternative renewable energy resources. The current main choices are wave, wind, solar and possibly bio gas. In the context of wave and wind the technologies are relatively underdeveloped for commercial adoption and is very expensive. Solar and biogas provide more plausible options but on small islands the quantity of slurry or other inputs to bio gas production might be limited to produce energy on a large scale. Solar is thus the most feasible option to date and the cost to the consumer is not as prohibitive as other alternative energy options. Solar technology for energy production is well established and islands are blessed with copious amounts of sunshine for long hours.

**Water**

Although many SIDS have sufficient annual rainfall to meet its needs and more, it is not surprising that many do not have sufficiently developed capture and distribution infrastructure. As a result there are often times no supply in the midst of heavy rainfall. An efficient water system in SIDS do not have to be an elaborate system. Simple hydro technology along river ways could enhance storage and the use of extra storage options along river courses could be a cost effective and sustainable option. Many SIDS are blessed with an elaborate network of rivers and streams

**Food**

The majority of low income and low middle income households in SIDS are obliged to consume highly processed canned foods with high sugar and salt contents with many additives and preservatives. This is because food that is imported is costly, imported fresh fruits and vegetables may not endure the duration and conditions of sea travel and must be brought by air. The cost of freight is high and this impacts the final cost of the product. Many SIDS cannot and do not pay salaries that allow the vast majority of the population to enjoy imported fresh, wholesome, natural, unprocessed food, including meat products. The irony is that the sea surrounding islands are teaming with healthy fish protein yet many islands have an undeveloped or underdeveloped artisanal fisheries sector but a better developed commercial fisheries sector that takes fresh fish to larger overseas markets for better profits. It is often the case in SIDS that the masses can better afford cheap imported chicken or other meats rather than fish. Apart from regular freight, insurance and other costs that affect food prices, these costs can be further increased due to “risks” and in the Indian Ocean an example is piracy or the physical state of the seas due to climate change. Many small islands do not have a sufficient volume of goods to ensure a regular and reliable sea transportation and are often at the mercy of shipping companies that ply the route only if and when it is profitable. It is therefore better economic sense for importers to bring canned and processed foods that have a longer shelf life.

For many social reasons including benefits to health, availability and accessibility to wholesome food and poverty alleviation it is necessary for SIDS to invest in a well-established agricultural sector and not as an economic activity that competes with other highly profitable investments like tourism or industrial fisheries but in such a way that the society can meet its international and national obligations on food and nutrition security.

## Ali Attoumani, MLEZI, Comoros

Original comment in French

L’ONG MLEZI est une organisation intervenant principalement au sud de l’île d’Anjouan dans le cadre de l’encadrement de la population rurale sur la lutte contre la pauvreté et l’insécurité alimentaire face aux effets néfastes dus au changement climatique.

Sur des sites situés à des endroits très accidents avec des sols complètement érodés, l’ONG propose aux petits producteurs propriétaires chacun d’une parcelle d’une superficie moyenne de 450m², la technique de l’embocagement tout en introduisant des variétés de manioc et de banane de variétés locales résistants aux maladies liées aux changement climatique avec des méthodes artisanales de conservation de la récolte pour assurer la disponibilité même en cas de catastrophe naturelle.

L’embocagement est une pratique constituée de 04 niveaux techniques. Il s’agit de :

Niveau I : Clôturer la parcelle avec des boutures de légumineuse (sadragon et/ou glyricidia) et mettre les lignes antiérosives à l’intérieur de la parcelle tout au long des courbes de niveau avec des mini boutures de légumineuses en association avec des éclats de souche de graminées (pénicétum et/ou guatemala). Les espèces légumineuses introduites à ce stade permettent d’enrichir le sol en azote et de produire du fourrage pour les petits et gros ruminants. Quant aux espèces graminées plantées au long des courbes de niveau, elles contribuent non seulement à la lutte contre l’érosion du sol mais aussi elles servent de complément alimentaire pour les animaux.

Niveau II : Construction des terrasses et banquettes entre les courbes de niveau et application de la technique de la vache au piquet.

Cette technique permet non seulement de réduire la pente en cascade mais aussi de fertiliser le sol à partir décomposition de la bouse de vache, et des déchets de fourrage non consommé par l’animal. L’urine de l’animal accélère notamment la fertilisation de la parcelle.

L’animal attaché autour d’un piquet après 30 jours, arrive à fertiliser en moyenne 10m² avant d’être déplacé à un autre endroit.

Niveau III : Pratiques des techniques améliorées de production telles que le semi en ligne, le buttage, le billonnage et l’utilisation rationnelle des pesticides et des engrais minéraux à titre de fertilisants complémentaires. C’est à ce stade que sont introduites les variétés améliorées de semences résistantes au changement climatique.

Niveau IV : Organisation de l’exploitation, commercialisation de la production et techniques de conservation des récoltes consistant au séchage du manioc et de la banane.

Les outils utilisés sont les émissions radio, les réunions de sensibilisation, la vulgarisation individuelle au niveau du site de production, les images et les échanges entre des paysans des différents sites.

Les défis à relever reste l’amélioration de la résilience des producteurs face au changement climatique et la lutte contre l’insécurité alimentaire.

English translation

The NGO MLEZI is an organization intervening mainly in the south of the Island of Anjouan in the context of the organization of the rural population in the fight against poverty and food insecurity in the face of adverse effects of climate change.

In very steep and broken up areas where the soil has been totally eroded, the NGO proposes to the small farmer-owners, each one with a plot of land of an average size of 450m2, the technique of establishing hedges by introducing varieties of cassava and bananas resistant to diseases arising from climate change, with traditional methods of conservation of the harvest to ensure availability even in cases of natural disaster.

The hedging method is a practice composed of 4 technical levels. They are:

Level I: Enclosure of the plot with cuttings of legumes (sadragon and gliricidia) and with anti-erosion lines of mini hedges, inside the plot along the contour lines, made of  legumes cuttings together with small clumps of natural grasses (pennisetum and guatemala grass). The legume species introduced at this stage provides enrichment of the soil in nitrogen and the production of fodder for both big and small ruminants. As for the grasses planted along the contour lines, they contribute not only to the fight against soil erosion but also serve as additional food for the animals.

Level II: Building of terraces and banking between the contour lines and use of the pegged cow technique. This technique not only allows to reduce the angle of the downward slope but also to fertilize the soil from the decomposition of the cow dung and the remains of fodder not eaten by the animal. The animal's urine increases notably the fertilization of the plot.

A pegged animal will after 30 days have fertilized an average of 10m2 before being moved to another place.

Level III: Use of improved production techniques such as in line planting, mounding, ridging and the rational use of pesticides and mineral inputs as complementary fertilizers. It is at this stage that the improved varieties of seeds resistant to climate change are introduced.

Level IV: Organization of exploitation, commercialization of production and techniques for conservation of the harvests comprising the drying of cassava and bananas.

The tools used are radio broadcasting, awareness meetings, dissemination to the individual at the level of production site, illustrations and exchanges among farmers of different areas.

The challenges to be noted continue to be the improvement of producers´ resilience in the face of climate change and the fight against food insecurity.

## Edson Cagape, Philippines

Sirs:

I grew-up in a rural area where green is all around but there was no electricity and but there is streams and rivers. Life in the rural areas is vicious where hunger is all-around after the planting season because you have to wait for 3-4 month for the next harvest season and those in-between months you can felt the crunched in your stomach notably in your brain witnessing almost entire families in the community consuming cassava and other root crops, bananas and munching on grated coconuts good for breakfast, lunch, dinner not just for a day but months waiting for the harvest season.

Going to school with bananas, cassava or other food-stuff good for breakfast and lunch and going home earlier to gather food still consisting of cassava or bananas for the next meal for tomorrow.

Looking back on my rural life days there is something that can be done. free-Electricity, small electricity power source (10KVA) that could irrigate farm lands by harnessing shallow canals, streams and rivers through disruptive technology power wheel manage by the community itself. It may cost 4 thousand dollars for such project.

But living near shorelines is better-off than living in plain rural areas.

I know SIDS have streams and rivers and lakes. They must opt for a free-energy through disruptive renewable energies.

## Audrey Pomier Flobinus, Humanity For The World (HFTW), France

Original comment in French

Bonsoir à tous,

Par la présente, trouvez ci-joint notre contribution pour ce sujet :

**Pouvez-vous donner des exemples d'actions menées pour réduire la pauvreté, l'insécurité alimentaire et les défis nutritionnels en réaction au changement climatique et aléas climatiques? Les actions peuvent aller du niveau informel au formel et inclure la protection sociale ainsi que des politiques, des projets, des activités, des programmes multisectoriels, etc.**

Les petites et grandes Antilles ou se situent certains petits États insulaires en développement (PEID) sont assujettis à de nombreuses catastrophes naturelles, pouvant donner lieu à de retentissent séisme telle que celui qui à touché Haïti en2010 ou encore le violent cyclone « Maria » qui à touché entre autres la Dominique.

En août 2017, l’ONG internationale «Humanity For The World (HFTW) » a mis en place une action pour l’amélioration des conditions de vie, d’éducation, contre la pauvreté, contre la malnutrition auprès de la communauté de Momance, notamment auprès de l’école « institution mixte les pionniers de Momance».

Humanity For The World (HFTW) est venu en aide directement à la communauté en situation de résilience en apportant un soutien financier et matériel.

À cette occasion, 7 ans après le séisme, l’ONG internationale à pu observer, mesurer l’impact psychologique et social des effets du séisme communauté de Momance.

La communauté de Momance est située dans un petit village de Léogâne en Haïti, elle a dû faire face à de nombreux défis au cours des 10 dernières années ; il n'y avait ni de puits ni eau courante, pas d'électricité, de mauvaises conditions de vie, pas d'école, et la plupart vivaient avec moins de 2 dollars par jour. En 2010, Léogane a été l'épicentre d'un tremblement de terre dévastateur qui a fait des milliers de morts et réduit la majeure partie du pays en décombres. Lorsque la poussière s'est installée, les chefs de village de Momance se sont réunis et ont formé un comité qui a formé une vision pour l'avenir de Momance. Ils voulaient un meilleur endroit pour leurs enfants et leur communauté :

* un conseil des anciens du village s’est tenu
* des terres ont été cédées pour la réalisation d’une école en vue de dispenser une éducation de qualité aux enfants de la communauté « Institution mixte les pionniers de Momance »
* Des personnes de confiance ont été choisies pour l’éducation des jeunes (Mr Mario LOREMY son staff d’encadrement)
* Les parents se relaient à l’école pour effectuer la cuisine et nourrir les élèves au déjeuner
* Bien qu’ils ne soient pas encore autosuffisants, nous avons pu observer que les habitants ont mis en place une production agricole (mais) pour approvisionner la cantine scolaire.

Grâce aux donations diverses et variées, au travail acharner de la communauté de Momance,

À l'automne 2012, un puits a été construit, en 2013, la phase de la construction d’une école pour accueillir les enfants de la communauté a été lancée, avec 2 salles de classe. Aujourd’hui, plus de 150 élèves à l'école, avec 4 salles de classe, une chapelle, un bureau et une aire de jeux. Chaque enfant reçoit également un repas chaud tous les jours. Un programme médical et dentaire a été ajouté et une clôture de sécurité est également en cours de construction. Il y a tellement de changements positifs dans Momance.

**Quelles leçons ont été dégagées du renforcement de la résilience et de la capacité d'adaptation des pauvres et des personnes vulnérables dans le contexte du changement climatique et des aléas climatiques?**

La résilience dont a fait preuve la communauté de Momance a fait des catastrophes, un pilier, une force qui a transcendé sa souffrance en énergie positive, ce qui leur a redonné l’espoir. Cet espoir a donné naissance à la construction d’une dynamique au sein de la communauté. C’est l’amour, présent à l’intérieur et à l’extérieur de cette communauté qui leur à permis de relever inlassablement la tête face aux catastrophes naturelles qui les a touchés.

C’est la preuve qu’un amour inconditionnel au sein de chaque action mène à un avenir meilleur.

La leçon que Humanity For The World (HFTW) tire de cette observation est que par nature, l’Homme est fort, l’instinct de survie des populations pauvres que l’on pourrait qualifier de « résilience » est à l’origine, de la créativité qu’ils déploient, quelque soit l’ampleur des catastrophes qui les touche.

**Quels sont les défis à relever pour réduire la pauvreté et les inégalités et renforcer la capacité d'adaptation des pauvres et des personnes vulnérables au changement climatique et aux aléas climatiques?**

Le grand défi est celui de la réconciliation des peuples de la terre

Le grand défi est de parvenir à considérer un Homme dans sa globalité pour ce qu’il représente pour l’Humanité en faisant abstraction de préjugés

Le grand défi est de savoir définir une société durable et résiliente, adaptable à chaque société, chaque population

Le grand défi est de fédérer les peuples du monde autour des mêmes priorités

Le grand défi est de mobiliser la population mondiale autour de la situation de la planète, de la souffrance des peuples victimes des changements climatiques.

Le plus grand défi est de repositionner l’Amour au centre de la vie des Hommes.

**Que faut-il tirer de ces expériences? Quelles sont les trajectoires plausibles et les bonnes pratiques que vous recommanderiez pour traiter la pauvreté, la sécurité alimentaire et la nutrition dans le contexte du changement climatique et des aléas climatiques?**

Humanity For The World (HFTW) à une vision pour le monde : Un amour inconditionnel universel

Nous pensons qu’il est indispensable de recentrer l’Amour au centre de la vie des Hommes.

Il est nécessaire d’appliquer un Amour inconditionnel au centre de chaque action pour évoluer vers un monde meilleur.

Faire de l’amour un étendard mondial sera salutaire, car la solidarité mondiale qui en émanera sera le bras armé qui pourra éradiquer la pauvreté, sécuriser l’alimentation et la nutrition dans un contexte enclin au changements climatiques et empreint aux aléas climatiques.

English translation

In this response, please find below our contribution on the subject:

**Can you share examples of actions that are being undertaken to reduce poverty, food insecurity and nutrition challenges in response to climate change and climate-related events? Actions can range from informal to formal and include social protection and multisectoral policies, projects, programmes, activities, among others**.

The Greater and Lesser Antilles, where some small developing island states are located, are subject to many natural catastrophes, including devastating earthquakes such as the one affecting Haiti in 2010 or again the violent hurricane "Maria" that affected Dominica, among others.

In August 2017, the International NGO Humanity for the World (HFTW) set up a project for improving living conditions, providing education, reducing poverty and malnutrition, for the community of Momance, in particular through the school called “Institution mixte les pionniers de Momance “[ The Pioneers of Momance Co-educational Institution].

Humanity for the World has directly helped this actively resilient community with financial and material support.

In this instance, 7 years after the earthquake, the International NGO could observe and measure the psychological and social impact of the consequences of the earthquake on the Momance community

The Momance community is located in a small village of the Leogane district in Haiti. This village has had to face many challenges in the last 10 years; there were no wells or running water, no electricity, bad living conditions, no school and the majority of people lived on less than 2 dollars a day. In 2010, Leogane was the epicentre of a devastating earthquake which killed many people and left most of the country in ruins. Once the dust settled, the Momance village chiefs met and formed a committee that developed a vision for the future of Momance. They wanted a better place for their children and their community:

* A village council of elders was created.
* Land was donated for building a school called "Institution mixte les pionniers de Momance” so as to provide quality education for the children in the community.
* Trusted people have been chosen for the education of the young (Mr. Mario Loremy and his teaching staff)
* Parents take turns at school to do the cooking and feeding of the children at lunch time.
* Even though they are not yet selfsufficient, we have been able to observe that the people have set up some agricultural production (maize) to supply the school canteen.

Thanks to several and varied donations, and to the unremitting work of the Momance community,

In the autumn of 2012, a well was built; in 2013 construction of a school to receive the children of the community was launched, with 2 classrooms. Today, more than 150 children go to school, with 4 classrooms, a chapel, an office and a playground. Also, each child receives a hot lunch every day. A medical and dental program has been added and also, a security fence is being built. There are so many positive changes in Momance.

**What lessons have been drawn from building resilience and adaptive capacity of poor and vulnerable people in the context of climate change and climate-related events?**

The resilience shown by the Momance community has turned catastrophe into strength, a force which has turned their suffering into positive energy, and which has rekindled their hope. This hope has given rise to the emergence of a dynamic force at the heart of the community. It is love, present inside and outside this community which has enabled them again and again to raise up their heads in the face of the natural catastrophes that have hit them.

It is proof that an unconditional love at the heart of each action leads to a better future.

The lesson that HFTW draws from this observation is that by nature, Man is strong, the survival instinct of poor people, that one could call resilience, is at the source of the creativity that they deploy, regardless of the extent of the catastrophes that affected them.

**What are the challenges of reducing poverty and inequalities and building the adaptive capacity of the poor and vulnerable to climate change and climate related events?**

The main challenge is the reconciliation of the peoples of the world.

The main challenge is to come to consider a Person in all their aspects, for what they represent for Humanity by setting aside all prejudice.

The main challenge is to know how to define a sustainable and resilient society, adaptable to each society and population.

The main challenge is to bring together people in the world around the same priorities.

The main challenge is to mobilize the world population around the planet’s situation, the suffering of the victims of climate changes.

The greatest challenge is to reposition love at the centre of human life.

**What should the world learn from these experiences? What are the plausible pathways and good practices you would recommend to follow when addressing poverty, food security and nutrition in the context of climate change and climate-related events?**

Humanity for the World (HFTW) has a vision for the world: Unconditional universal Love.

We believe that it is indispensable to refocus Love at the centre of human life.

It is necessary to apply unconditional Love at the centre of each action to develop a better world.

To make Love a world standard would be the salutary, because the world solidarity that would emanate from this would be the strong arm that could eradicate poverty, secure food and nutrition in a context prone to climate change and marked by the vagaries of the climate.

Dr.h.c Audrey POMIER FLOBINUS

Humanity For The World (HFTW)

## Bhubaneswor Dhakal, Nepal

Many socioeconomic and environmental factors in those countries are both opportunities and barriers to address poverty and climate change problems.

The communal landownership in the small islands countries in the Pacific region, for example, make easier to distribute the lands for food production to needy people but the ownership has discouraged the people for economically productive uses.

These people of the countries are likely to be seriously suffered if extreme natural disasters and global political crises coincidently overlaps or happened together. These countries cannot avoid the cyclones due to geophysical positioning. They need diversification in food and economic business to survive in serious humanitarian crises and take economic benefit in market based business in harmonious international environment.

Unfortunately, international agencies have influenced on the values and behaviors of community leaders and policies of government agencies and used the lands under tree planation for making high benefit (offsetting carbon) to distant users.

If indigenous agroforestry system was integrated in the plantation, it would alleviate food and nutritional problem. The trees would reduce damage of cyclones in indigenous food system. Vested interest foreign people have strategically influenced to the community leaders and government agencies.

If FAO is committed to help those countries, its management requires identifying the vested interest people and ethically discourage their inappropriate interventions.

Thanks.

B. Dhakal

## Daniela Coswig Kalikoski, FAO, Italy

Thank you to everyone who has participated to date for their thoughtful and insightful contributions. Some of the key points we have heard so far:

* The rich and varied local contexts of SIDS and the communities that form them, in terms of culture, history, economy, environment must be recognized and adequately understood in order to address the threats presented by climate change and disasters;
* While current understanding of poverty has advanced beyond economic aspects to include broader dimensions of wellbeing including food security, nutrition, safety and more, too often this is not adequately reflected in policy and program implementation and monitoring;
* For many SIDS, local agriculture is essential to local food security – policy should align with this to support these critical social objectives first and foremost.
* A variety of initiatives to improve local agriculture were described, including: capacity development and accessible technology to improve soil quality and retention, adaptive practices such as timing plantings to better line up with changes in hydrologic cycle, improved water conservation and storage, affordable irrigation, conserving and making use of local biodiversity, post-harvest processing and conservation practices to build on local knowledge and adapted to climate change realities;
* The national economies of many SIDS are service sector oriented – while this can be positive in motivating conservation interest, more attention is also needed towards developing opportunities for local livelihoods based on sustainable use of natural resources as part of addressing poverty and inequality, for example through further developing agro-forestry, agro-tourism, artisanal fisheries for local markets;
* Fisheries and use of other marine resources are activities in many SIDS that are in need of greater attention and support to develop and maintain sustainable local harvests for local markets;
* Urban planning in coastal cities should consider the interconnectedness of aquatic and terrestrial landscapes and work to support ecological integrity and conservation/enhancement of ecosystem services;
* Scenario development offers a useful opportunity to model what future socio-economic needs might be under different conditions;
* Structured review processes can be useful to assess and improve the alignment of policy and plans with climate adaptation and poverty reduction objectives, as well as to provide guidance on opportunities for adaptation financing (for example as in the case of Zanzibar’s MKUZA II);
* Participatory approaches and initiatives that work at multiple levels and cross-sectorally should be mainstreamed as key levers in building capacity and improving integrated approaches.
* Many small island countries are heavily reliant on food imports, which lead to a progressive abandonment of traditional foods and local varieties.
* A substantial percentage of the poor population relies on processed imported food, which is high in sugar and salts, further exacerbating the incidence of NCDs such as obesity.

We would still like to hear more details about your experiences with climate change adaptation and poverty reduction (considering climate-related poverty prevention and alleviation, and addressing inequality). Specifically how can the impacts of poverty reduction initiatives best be monitored?

Best,

Daniela

## Jodean Remengesau, FAO, Italy

Thank you for this opportunity for SIDS countries to share their experience. In building on the following two points below, I would like to contribute to the forum with a well-documented example of Palau, Micronesia region, Pacific SIDS:

* The national economies of SIDS are mainly service-sector oriented, and more attention is needed to develop opportunities for local livelihoods based on sustainable use of natural resources.
* Participatory approaches and initiatives that work at multiple levels and cross-sectorally should be mainstreamed as key levers to building capacity and improving integrated approaches.

Yes, it is important to acknowledge, as well as come to terms with, SIDS economies tend to hop on the bandwagon of service sector investment because of its quick profit turnovers, due to the fact that we have adapted and become reliant in our survival on technological advancements (i.e. high-speed internet connected by fiber optic cables) and modern conveniences ( i.e. public electricity and water). Oftentimes these present-day conveniences that comprise of what defines a 'developed nation', compromise on natural resource recycling functions, i.e. wildlife breeding cycles and carbon sequestration. However, this has not always been the case. The original founders of Palau, for example, embedded into the constitution, conservation and no-take (no harvesting) zones. There is a group of islands called the Seventy Islands that are protected under the constitution as eternal no-take zones, and with a sustainable management plan, the coexistence of tourism and responsible ecosystem management is present in Koror State, Palau. Please read more in detail here:  https://whc.unesco.org/en/list/1386

This is because of the close interlinkage and dialogue between the traditional leaders, legislative bodies, private sector (tour companies) and the transparent information-sharing with the rest of the community. To the people of Palau, the environment (both land and sea) and human society is a single body.  Responsible management is engrained in the culture and a systems thinking of a long-term vision for the benefit of the next generation of Palauans remains at the forefront of the island country's economic development agenda.

## Jethro Greene, Saint Vincent and the Grenadines

EASTERN CARIBBEAN TRADINGAGRICULTURE AND DEVELOPMENT ORGANISATION (ECTAD CARIBBEAN) was set up by farmer leaders in 2009 to address the problem of poverty amongst small farm families.

We share with you one of our simple approach use by ECTAD CARIBBEAN Working with small farm families in several villages in St Vincent and the Grenadines,

Our approach is on promoting environmentally sustainable production and sustained profitable markets for our small farm families. We have an example of some success with one crop dasheen/taro.

The production methods used by farmers planting mainly on the hillside is a whole system instead of a mound for planting. This method saw over 120% in crop yield over 98% reduction in hillside soil slippage. Farmers and farmer leaders are clustered into groups of their own design and provided training in production, grading, post-harvest handling packaging leading to profitable market links in the Caribbean and Europe.  By eliminating the inefficiencies in the value chain they saw their price increase of between 100 and 150 %, reduction in transaction cost and more competitive prices to the final buyers.

The marketing program is ongoing for over 7 years and after selling over 5 million pounds of products they have not had a claim from buyers. So satisfied are the buyers that the markets are increasing and other crops are being added. These farmers clusters are mainly headed by female farmer leaders they coordinate sorting,   grading and packaging. The clusters also have a key role in setting the prices based on market information.

We are seeing successful business small farm families we are encouraging the young people in the family to be involved with record keeping and information and forecast that will help with production and marketing. We are seeing that once the profitability is demonstrated more and more young people are showing interest in farming as a business.

Jethro Greene,

Chief Coordinator,

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## Lideke Middelbeek, Jongeren Op Gezond Gewicht, Netherlands

Hello,

Please have a look at the article, Built to last? Local climate change adaptation and governance in the Caribbean – The case of an informal urban settlement in Trinidad and Tobago , that we wrote some years ago about CC adaptation in Trinidad and Tobago, it contains many interesting insights that we gained during our fieldwork in a squatters settlement. Here is a link; <https://www.sciencedirect.com/science/article/pii/S2212095513000631>,

Please don’t hesitate to get back to me for the full article PDF.

Kind regards,

Lideke Middelbeek.

## Andrew Isingoma, Agriculture consultant, Rwanda

**Response to Question 1:**

The examples of actions that are taken to reduce poverty: First and foremost thanks for these good questions which help me to express activities done very relevant to my career, there are a number of activities done to reduce poverty, food insecurity, and nutritional challenges in response to climate change:

**A, Reduce poverty:**

There are many activities being done to reduce poverty like enabling or financial facilities to the farmers in cooperatives to support their micro-projects of agricultural activities, those activities include: growing of tomatoes, and other horticultural crops which do not require higher agronomic techniques and farmers take the products to the market. We can talk of activities done to facilitate traditional water harvesting like rain water harvesting that helps farmers to irrigate their horticultural crops, micro-loans, financing the trainings of farmer informal agronomists to help other farmers. Farmers education: this is teaching farmers the importance of using modern farming systems like use of fertilizers, spraying, proper planting methods, growing periods all mentioned activities are being done to reduce poverty in people vulnerable to poverty to improve their livelihoods.

**B, Food insecurity and climate change:**

The results of climate change are increase in drought of many areas and very low rainfall in many areas of the world, here as plant breeders and all environmental specialists; the response to this problem is the introduction of new crops and plant species which can resist climate drought problems, this activities of introducing new crops are done in many areas of research institutions, new crops like hybrid maize, beans, sorghum, millet, banana, wheat, rice, etc are being introduced to farmers, these drought resistant crops helps to reduce food insecurity.

The activities done by Nigerian farmers of digging small hills in their field to hold rain water this helps to prolong the water in the soil and reduce soil erosion.

**C, nutrition and climate change:**

There are a number of activities being done to improve nutrition; like projects that support processing to increase a number of products from the same crop/plant, processing include package/storage facilities of the product to resist dryness for a long period of time, reducing deterioration and seed dormancy to crops, proper seed storage and overall increased value to the crop for being useful for a long period of time after harvest while actually have not lost its nutritional content

**Response to question 2:**

The lesson from adaptive capacity build to the poor involves a number of recommendations from the experience learnt; first, when you want to develop a community base on their culture and customs, if you bring something they don’t understand it will collapse when you depart, or they will just do it to make you happy. The crops liked by a community or which bring economy to the poor people. You give facilitation to the people basing on the commodity which can do well in ecological condition of the region. The farmers usually grow crops which do well in their region and the development should come to support the very crops preferred by the farmers and can do well in that agro-ecological conditions. There should be a forecast to resist climate events like floods, which destroy crops and human building; by digging water harvesting dams, planting trees around bare areas and the fields.

**Response to question 3;**

The challenges are introducing projects that are not relevant to the community customs or religion,

Not allowing the target group in the suggestion of the micro projects which supports them,

introducing of crops which do not do well in the ecological condition of the Areas,

Introducing of commodities which are not relevant to the need of the society and are not preferred by the majority.

Poor planning and policy makers who are the final decision makers

The individuals who do not like the good progress of the target areas and start dirty education of resisting projects

**Response to question 4;**

What should the world learn from these experiences?

The would should first reason the climatic behavior and changes and the way out.

The world should promote plant breeding sciences because it is the only way to do crop gene editing which can change crop to match climate changes.

When addressing poverty include community members to participate and respect responses given by farmers in survey questionnaires.

Avoid introducing a commodity (a crop) without clear information of climate or ecological condition of the region.

The projects should facilitate farmers’ needs basing on the economic crop.

The world should promote horticultural crops because most of crops does not require higher agronomic techniques to be grown and have a great healthy importance

These should be projects supporting irrigation and water storage facilities not depending on rain water.

## Hika Jospeh, The Pacific Community - Youth@Work, Solomon Islands

**Respond to Question 1:**

I understand that there are lots of programs/projects that were targeted to reduce poverty, food security, and climate change ect. I would like to share our experience here in the rural areas of Solomon Islands. Our Young people were always excluded in the actual implementation or participation in any activities. There are lots of reasons why - ranging from culture, education and others.

Our young people are the future of SIDS.  Their lives are directly affected by climate change and is threatening their livelihood. We, the young people need to know the causes what is threatening our livelihood, need to be informed, must participate in programmes, and have a voice in policy making decisions.

From my experience, it is better to design youth led initiatives, because young people tend to listen better to their peers than to someone outside of their group age. Considering the culture factor.

I would recommend more programmes/project to be youth let. I appeal to governments and donors to support youth led organisations and movements that are trying to address the socio -economic issues in SIDS.

1. Poverty is not exclusively measured in monetary terms, but it’s also a social issue that encompasses individual’s wellness and wellbeing, including the natural environment of the population in a given time. It can also involve problems of marginalization, powerlessness, lack of voice, and disconnection, and it’s closely related to other concepts that aim to understand its causes, meanings, and consequences. [↑](#footnote-ref-1)