

# Chapter 15

## Education, Extension, and Training for Climate Change

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### ABSTRACT

*This chapter details the education, extension, and training interventions that are needed in this changing global climate situation, with a focus on Small Island Developing States (SIDS); new content will have to be taught, and innovative education and extension methods will have to be embraced. Actions will be needed at the highest levels of government to build capacity in all sectors and funding will have to match programmes and projects. SIDS are by nature not well-endowed with financial resources, and as such, there will be challenges with the training of teachers and extension staff and the conduct of public education activities. Notwithstanding, creative ways can be developed by governments, community leaders, and all civic-minded persons in SIDS to access such funds and undertake the appropriate actions that are needed to educate and train resource persons in these areas.*

### INTRODUCTION

While some academics continue to debate whether or not the phenomenon of climate change is valid, it is clear that changes in climate patterns are being experienced globally. The fact that there is consensus among scientists world-wide that our climate is warming, and that the changes evoked over the last 100 years can be attributed to human activity, is very troubling and demands urgent attention (IPCC, 2007; Doran and Zimmermann, 2009). The effects of climate change vary around the world, and in places where persons are most affected, the phenomenon is now being embraced with concern, and actions are actively pursued to address the challenges presented. The increasing level of concentration of greenhouse gases (GHG) in the atmosphere has been directly linked to the changes being experienced in the world's climate. Although, global warming is a world-wide phenomenon, by its very nature, its expected impact would not be uniform geographically nor will the risk of associated hazards be similar. Global warming

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impacts several important biological and physical processes at various levels, and world economies face varying degrees of vulnerability to it (Allison et al., 2009). Climatologists have presented a number of scenarios of future climate change patterns, to illustrate the impact that changes in surface temperatures, rainfall patterns, sea level rise, ocean temperatures, ocean pH and ice levels can bring about. In all instances, the effects on the world and its inhabitants are negative, with the increasing frequency of extreme weather events associated with global warming, having the potential to transform lives across the world.

Because climate change effects will not be equally felt around the world, some countries and broad regions of the planet will be more vulnerable than others and are likely to feel the impacts much more. In other words, while countries face various challenges due to climate change, they differ in the degree of vulnerability as well as adaptive capacity and preparedness. According to Kelan et al. (2009), Small Island Developing States (SIDS) are particularly prone to climate change due to their geographic, ecological and socio-economic circumstances as well as resource constraints, and further, because of their limited response capacities, face serious climate change-driven challenges. The area of food production however is at greater risk, so that SIDS must strategize now, rather than later, to ensure their food is secure.

Sea level rise which is predicted to proceed at a rate of 5 mm/year, loss of biodiversity and damages to coral reefs and degradation of coast lines, along with a higher risk of more powerful natural hazards, pose additional challenges for SIDS (Kelan et al., 2009). Consequently, they are likely to face shrinking national economies as main economic activities like tourism, fisheries and agriculture weaken and decline over time. All these potentially serious threats are envisioned in regions where adaptive capacity is generally considered to be low (Kelan et al., 2009). So for SIDS, climate change resilience is highly dependent on building human capacity for mitigation, adaptation, effective mobilization and deployment of the inhabitants. Climate change and its ecological impacts are not going to be short lived phenomena and building capacity of at-risk people to respond to anticipated impacts of climate change through education, extension and training must be of highest priority.

Already in some SIDS in the domain of food production, actions are being taken in many areas such as water management, postharvest, pest and diseases management and other relevant activities to meet food and nutritional security challenges to address the issue of climate change. As such therefore, this chapter will focus on primary education, public education, the provision of food production related extension services to those most vulnerable, and the training required to help communities that depend on food production for their livelihood.

## **SCOPE OF EDUCATION, EXTENSION, AND TRAINING**

According to Herren (2013), “agriculture represents the lowest hanging fruit for climate change mitigation by simply doing what we already know how to do at and at little costs to the transition”. A shift in food production to more sustainable forms involving eco-friendly practices is thus required. Further, “the transition would be accompanied by a number of windfalls from a substantial reduction in healthcare costs because of healthier eating and living habits and to a drastic reduction of ecosystem service costs and substantial savings for reducing subsidies” (Herren, 2013). It is in this context that the scope of education, extension and training activities are discussed. For purposes of this chapter therefore,

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