Capacity Building for Climate Resilience in Seychelles

Michele Martin

Introduction

Climate change represents a major threat to Seychelles' economy and way of life due to changes in rainfall patterns, sea level rise, increased coastal erosion and flooding, as well as impacts on marine ecosystems and fisheries due to ocean warming and coral bleaching (GoS, 2009; 2012; 2015). The Government of Seychelles (GoS) has committed to both reducing its contributions to greenhouse gas emissions and planning ahead to adequately prepare for the impacts of climate change, and this commitment has been captured in the Intended Nationally Determined Contribution report submitted at the Paris Climate Change Summit in 2015 (GoS, 2015).

While awareness of climate change is generally high in Seychelles (Stantec et al., 2018a), the process of translating this awareness into concrete policies, plans and legislation to seriously address climate change in most government sectors is only now beginning to take shape. The cost of shifting to clean energy and climate-proof development is significant and a deterrent to immediate action, but the cost of dealing with climate impacts later may be much higher. Moreover, the cost of climate action can be outweighed by the diverse co-benefits generated by improved climate resilience, including energy, food and water security, diversification of the economy and generation of new green jobs, and protection of ecosystems and natural beauty needed to sustain a viable tourism industry for the future.

Capacity building has been identified in many Seychelles government reports as one of the key strategies to move forward to mainstream climate change across all sectors and improve the nation's resilience in the face of climate change (GoS, 2005; 2009; 2011; 2012; 2015). But what exactly is meant by the term 'capacity building'?

The United Nations Framework Convention on Climate Change (UNFCCC) defines capacity as the knowledge, the tools, the public support, the scientific expertise and the political know-how that a country needs in order to identify, plan and implement ways to mitigate and adapt to climate change (UNFCCC, n.d.). Climate resilience is the goal, whereby a country has the ability to anticipate, prepare for, and respond to the impacts of climate change, from gradually changing temperatures and precipitation to extreme events and natural disasters (C2ES, n.d.).

Broadly speaking the UNFCCC aims to help countries build this capacity on three levels:

- ***Individual*** – developing educational, training and awareness-raising activities
- ***Institutional*** – fostering the development of organizations and institutions, including their missions, mandates, cultures, structures, competencies, and human and financial resources, as well as the cooperation between organizations, institutions and sectors
- ***Systemic*** – creating enabling environments through economic and regulatory policies and accountability frameworks in which institutions and individuals operate (UNFCCC, n.d.)

Capacity building thus encompasses a very wide range of actions including public awareness campaigns, community-based programmes, programmes for schools and other educational institutions, workshops and professional development, developing policies, financial mechanisms and legislation that support and promote climate action, and enhancing dialogue and collaboration between various agencies.

The need for capacity building for climate change mitigation and adaptation is well documented both internationally and locally. The UNFCCC recognized capacity building early on as one of the key strategies to tackle climate change, targeting primarily developing countries and countries in economic transition. In 2015, the UNFCCC renewed its commitment by establishing the Paris Committee on Capacity Building (PCCB) to address current and emerging gaps and needs in implementing and further enhancing capacity building in developing countries (UNFCCC, 2018).

Being a signatory to the UNFCCC, climate change capacity-building efforts in Seychelles are framed in these same terms. One of the first direct attempts to identify capacity building needs for climate change was undertaken in 2005 as part of the National Capacity Self-Assessment (NCSA). This exercise determined priority needs for developing Seychelles' capacity to meet its commitments to the UNFCCC and other global environmental conventions. The report identifies a broad range of capacity needs related to integrated management and project development, data management, research and monitoring on climate variability, technology development, human resource development and education and awareness campaigns (GoS, 2005). Many of the recommendations related to climate change were highlighted again in the National Circumstances Report from the Second National Communication (SNC) to the UNFCCC (Agricole, 2009), integrated into Seychelles National Climate Change Strategy (NCCS) (GoS, 2009), and reiterated again in Seychelles Sustainable Development Strategy (GoS, 2012). More recently, in 2015, Seychelles' Intended Nationally Determined Contribution report to the UNFCCC again highlighted capacity building as a key issue (GoS, 2015). Out of all of these documents, the SSDS provides the most insight into Seychelles' general approach to capacity building, recommending institutionalization of capacity building over limiting the scope to isolated projects and initiatives, in order to provide long-term sustainability and support (GoS, 2012, p.14).

The NCCS (2009) and the SNC (2009) both highlight climate change capacity in two different ways. Firstly, they emphasize specific capacity building that focuses largely on building technical scientific skills to support better climate/meteorological research, monitoring and modeling as well as gathering baseline information on natural and built environments to better support assessment and monitoring studies (GoS, 2009, p.54). Secondly, both documents refer to capacity building that is more general, in terms of education, awareness and development of courses related to climate change and sustainability more broadly. Most relevant to this paper, the NCCS (GoS, 2009) includes a chapter that focuses on education, awareness and training to support climate change mitigation and adaptation. The focus of this paper is primarily on capacity building activities that have been implemented under the GCCA+ programme, in support of this action plan.

It is beyond the scope of this paper to fully list or attempt to assess all climate change capacity building actions from across the NCSS that have been implemented to date. However, it is worth noting that over the past decade there have been a significant number of actions implemented in part or full through various projects and programmes implemented by the government and civil society organizations, and with support from international and regional programmes. Reviewing and assessing the scope of these collective actions will be the focus of Seychelles' forthcoming Third National Communication to the UNFCCC. For this paper, the scope will be limited to reviewing and discussing actions which have been implemented under the GCCA+ project between 2017 and 2019, with reference to the objectives of the NCCS.

Climate change capacity building under the GCCA+

The National Climate Change Strategy (GoS, 2009) or 'NCCS' has the most clearly defined list of actions pertaining to climate change education, training and awareness, the focus of this paper. This strategy has four objectives, the last of which focuses specifically on 'build[ing] capacity and social empowerment at all levels to adequately respond to climate change'. As previously indicated, several of the other objectives also touch on capacity building but in many cases pertaining specifically to the capacity to undertake research, monitoring and modelling specifically.

The NCCS includes a long list of actions to build capacity to address climate change mitigation and adaptation through education, awareness and training, targeting different audiences ranging from school children to decision-makers. These actions and a general summary of their current status are detailed in Table 1 in the Appendix.

The actions of the NCSS are organized under four objectives:

1. Develop climate change education and communication

2. Implement climate change awareness at all levels
3. Strengthen formal climate change capacity- building institutions
4. Develop the capacity for global environment management, and in particular climate change

It is clear that the NCCS was seeking to build capacity at all levels: individual, institutional and systemic; and also that this key strategy document for climate change in Seychelles focused on building capacity to build resilience and prepare the population of Seychelles for the impacts of climate change as well as to enable more action to reduce the country's carbon footprint. If anything, the focus is more on adaptation, this is in line with Seychelles' status as a non- Annex 1 party to the Kyoto Protocol of the UNFCCC and its vulnerability as a SIDS. The vision for the NCSS on the cover page captures this imperative: 'To minimise the impacts of climate change through concerted and proactive action at all levels of society.'

The table in the Appendix provides a list of these actions and a general summary of their current status. As indicated in the table, a wide diversity of activities in support of climate change capacity building has taken place since the launch of the National Climate Change Strategy in 2009. These have targeted formal education institutions, government staff, the public, community groups, and to a lesser extent the private sector. Activities have been planned and implemented by an equally wide range of agencies including the government, NGOs, and by projects funded by the donors such as the GEF, UNDP, Adaptation Fund and World Bank.

More recently, in 2017, the Government of Seychelles began implementation of a project funded by the EU's Global Climate Change Alliance (GCCA+), entitled: Component A – strengthening the climate change sector policy framework. The Global Climate Change Alliance (GCCA) is an EU initiative that facilitates the sharing of knowledge around climate change globally. The GCCA+ is the second instalment of this initiative and, in Seychelles, the project is intended to help the people, economy and environment to adapt to and develop resilience to climate change and its effects, thereby safeguarding the sustainable development of the country. Component A of the GCCA+ project, launched in late 2017, is providing technical assistance over three years to strengthen the climate change policy framework by improving climate governance, enhancing capacity to access and monitor climate finance, and building capacity for the Ministry of Environment, Energy and Climate Change (MEEC), and other key stakeholders, to lead climate action. The project clearly aims to address capacity building at all three of the levels identified by the UNFCCC: individual, institutional and systemic.

In order to deliver on this objective, the GCCA+ project has a team of international and local climate change professionals, dedicated to capacity development support and the sharing of knowledge from other countries around the world. One of the first activities implemented under the project was to undertake a capacity needs assessment in 2018 to

guide capacity-building activities. The assessment exercise focused primarily on senior management representatives from the MEECC and other key government stakeholders (Stantec et al., 2018a) since the focus of the GCCA+ project is primarily on government policy and programmes. Sectors included in the assessment included different divisions of the Ministry of Environment, Energy and Climate Change, as well as Tourism, Planning, Infrastructure, Lands, Seychelles Land Transport Agency, Fisheries and Agriculture, Health, Blue Economy, DRDM, the National Meteorological Authority, and The University of Seychelles (UniSey).

This assessment revealed that while most government bodies recognized the urgency of climate change, few believed that their organizations currently had the knowledge or capacity to adequately address it in a concrete manner. Key areas identified through this exercise that needed support to build capacity included the following:

- Integrating climate change into national policies, strategies, legislation and other guiding documents
- Implementing effective climate change communication, education and awareness strategies
- Improving climate data collection, tracking, and document management
- Modelling climate change impacts on diverse sectors
- Effective project writing for climate change
- International climate negotiations, lobbying and diplomacy
- Climate finance
- Organizational audits related to climate change
- Climate change and health
- Terrain risk assessment for climate change adaptation

These findings mirror quite closely the areas of action of the NCCS, with a few minor exceptions such as the request for support with project writing and audits. The similarity indicates that the objectives of the NCCS have not yet been fully achieved and that there is an ongoing demand for capacity-building support in response to new information about climate impacts, and new opportunities for action as climate change becomes mainstreamed across government policy in different sectors.

Although the assessment exercise targeted primarily government stakeholders and the capacity-building needs of their organizations, many respondents emphasized that whenever possible their partners from the private sector and civil society should also be invited to participate in training opportunities, in order to 'improve sharing of experience and … lead to better collaboration and absorption of new methods at all levels' (p.21). This in fact reflects the approach of both the NCCS and the more recent INDC (GoS, 2015), both set within the understanding that all key stakeholders from government, the

private sector and civil society must be part of any national plan or policy to respond to climate change.

Respondents also recommended that training sessions adopt a balance between theory and practice, and be firmly grounded in actual, local examples and case studies in order to help participants comprehend the real-life application of what they were learning. Many respondents also underscored the need for more climate change education programmes to address the general low level of awareness in the general populace of climate change and action needed to address it.

By mid 2018, the GCCA+ project was rolling out a range of training opportunities to address some of the needs identified in the assessment exercise. To date workshops hosted by the GCCA+ have covered topics such as tourism policy, community development and vulnerability, communication, management, health, construction, seasonal and climate modeling, climate finance, climate negotiations, etc., as well as basic climate change science (Stantec et al., 2018b) and more are being planned including training on early warning systems and risk, climate proof drainage, climate proof building design, and others.

The GCCA+ workshops have been organized in collaboration with the key stakeholder groups who requested them, and in several instances also been co-funded by these groups as well as concurrent projects such as the Ecosystem Based Adaptation to Climate Change (EBA) project, funded by the Adaptation Fund and the UNDP. The GCCA+ team strive to provide follow up support to the participating organizations who wish to engage in further capacity building. Feedback from workshop participants has been promising, regarding the interactive and participatory approaches used, and the tailoring of information and activities to particular audiences and sectors. An assessment of longer-term impact of the workshops has not been yet been attempted.

While short-term workshops can be useful in terms of introducing the issue of climate change and giving organizations the opportunity to start planning long-term integration of climate issues into sectoral plans and programmes, there is also a need for longer sustained training opportunities that go beyond the life of an individual project such as the GCCA+ and can build institutional and systemic support for climate change capacity building. With this in mind, the GCCA+ is working with the University of Seychelles to support their ongoing efforts to integrate climate change related topics into their BSc Environmental Science programme as well as a soon to be launched MSc in Marine Science and Sustainability. UniSey has already begun to offer a stand-alone short course in climate change science for working professionals and plans to continue to offer this important training opportunity in future years. Similarly, the Guy Morel Institute (TGMI), which offers diploma, certificate and short courses in organizational and financial management, is being supported by the GCCA+ in the process of integrating climate change considerations into all of their programmes. TGMI is also about to

launch an elective on climate change for their diploma courses that can also be taken as a stand-alone course by working professionals in the management and finance fields.

It is clear that many capacity-building activities have taken place in Seychelles over the past decade to build greater awareness of climate change and that these have been led by many different organizations and projects, the GCCA+ project being just one. What is not so well defined is the degree to which these activities have collectively helped participants and organizations gain the skills and commitment needed to take action to both mitigate and adapt to climate change. The next section explores what climate change communication literature has to say about best practices and criteria that might be used to evaluate the effectiveness of past capacity-building efforts.

How are we doing?

Despite the many climate change capacity-building actions that have been implemented in Seychelles, there is a strong sense that there is more to do: we have not yet reached the point where the citizenry, the business community and even the government of Seychelles is fully aware of how climate change is already affecting the economy, ecology and society, and much less fully motivated and engaged in actions to reduce emissions and adapt to climate change. This statement is based on observations and recommendations emerging from workshops and reports about the need for more and better climate change education programmes targeting different audiences.

However, to determine whether capacity-building efforts in Seychelles are indeed having the desired outcome, at least two conditions must be met: 1) there is a reasonably detailed inventory of climate change education, awareness and other capacity-building efforts done to date by different groups and targeting different stakeholders; and 2) some research on the effectiveness of these efforts and potentially more useful strategies is undertaken. At the moment, compiling a complete inventory would be fairly straightforward work (the table in the Appendix represents a first step in that direction), however there has been no detailed attempt to try and evaluate the effectiveness and impact of these efforts, save the relevant chapter from the Second National Communication (SNC) to the UNFCCC (GoS, 2011), and a brief review of this chapter as part of the SNC self-assessment exercise completed in 2017 (Martin, 2017). To date, there has been no comprehensive assessment done and further work is urgently needed to determine what is working, what is not, and which strategies might be most effective as more detailed information emerges from the global research community about how the climate crisis is unfolding and the priority actions needed to both reduce emissions and prepare for the worst impacts (Martin, 2017).

A large body of research in the field of climate change communication has emerged over the past three decades, since the climate crisis first became widely recognized

(Markowitz and Gukiam, 2018; Moser, 2016). Since 'climate change communication' refers to any effort – explicit or otherwise – that aims to raise public awareness, understanding, and/or active engagement with the issue (Moser, 2010), the body of literature associated with climate change communication represents an ideal space to explore theories and recommendations regarding effective capacity-building strategies. And so, while it is not possible at this time to answer the question, 'how are we doing in Seychelles?', the international climate change communication literature can point to best practices, insights and principles that may be useful for future attempts to explore the effectiveness of climate change capacity-building efforts in Seychelles and elsewhere.

In 2009, the American-based Center for Research on Environmental Decisions (CRED) published a handbook, *The Psychology of Climate Change Communication: A Guide for Scientists, Journalists, Educators, Political Aides, and the Interested Public* (CRED, 2009), which has been widely used by climate change communicators (including in Seychelles) as a guide to designing effective strategies. This handbook includes a list of 8 principles to help communicators reach their audiences more effectively:

1. Know your audience (their values, their mindsets, the cultural context, etc.)
2. Get their attention (find the best ways to frame problems so that audiences are interested)
3. Translate scientific data into concrete experience (to make it understandable and rooted in real life situations)
4. Beware the overuse of emotional appeals (avoid numbing them by focusing on simple steps and tiers of action)
5. Address uncertainties (there are many when it comes to climate change, and there are strategies for being direct about what is known and tackling what is not yet clear)
6. Tap into social identities and affiliations (the peer groups with which your audiences identify)
7. Encourage group participation (creating opportunities for people to learn and act together)
8. Make behavior change easier (by optimizing default options and providing near term benefits)

These principles laid out in the CRED guide, based on the latest research and best practices at the time, are very useful and in fact this document has been used and shared in Seychelles as a reference for climate change communication training, led by the GCCA+ and other stakeholders.

While resources like this are very helpful, in her climate change communication literature review, Moser (2016) affirms that generally, globally, scientists and practitioners in the field continue to search for the most effective ways to motivate people to change to help communities, organizations, or political jurisdictions, mitigate

and adapt to climate change. What has become increasingly clear is that communicating knowledge about climate change science or types of climate action is not sufficiently motivating to bring about the changes needed to actually address climate change. She identifies a shift toward communication strategies that focus on directly enabling and empowering action, but not necessarily in a prescriptive fashion (Moser, 2016). Moser also emphasizes the need to firmly ground climate change communication efforts in the local context and culture (pers.comm. May, 2019).

González-Gaudiano and Meira-Cartea (2010) agree that action is critical, but question the effectiveness of climate education programmes that ask participants to adopt 'a small group of simplistic, atomized, and disarticulated actions, which are individual in nature and without a broader programme' (p.16), and call for programmes that also tackle action of a deeper, more systemic nature. This kind of action they are referring to might, in the context of Seychelles, include lobbying government to improve public transit systems, divesting from fossil fuels, working to reduce rampant consumerism and waste, designing buildings that are energy and water efficient, participating in public meetings and projects to protect and restore critical ecosystems, rather than the isolated actions such as switching off unused lights and appliances.

Looking specifically at community capacity-building programmes to increase climate resilience (focusing primarily on adaptation), Cinner et al. (2014) go deeper and wider. Focusing their attention on tropical coastal communities, they propose an approach to build adaptive capacity across five domains: ensuring that people have access to the assets they draw upon in times of need; having the flexibility to change strategies; learning how to organize and act collectively; learning to recognize and respond to change; and empowering people and communities to have the agency they need to make their own decisions about whether to change or not. Again, here there is an emphasis on action, although also about learning, collectively, how to organize and act collectively and appropriately, in response to climate change. The EBA project in Seychelles provides a good model for this approach, by inviting community members to local independent watershed committees, providing training opportunities for members and assistance with planning and implementing action projects, as well as support for establishing good governance practices. The GCCA+ project has collaborated with the EBA project on several occasions, including providing training for community leaders on climate change and assessing community vulnerability.

However, Cinner et al. (2014) also draw attention to the difficulty of assessing the success of efforts to build adaptive capacity due to very limited documentation and monitoring. They recognize that better documentation of efforts in all five domains is critical to future effective adaptation to climate change, and thus should be built in to capacity-building programmes. Many climate change capacity-building activities such as the example from the EBA project above have engaged in some monitoring and have documented their efforts. What might be needed now is an overarching assessment of

the effectiveness of these collective approaches to community based climate change capacity building.

Turning to capacity-building efforts in formal education systems, in a review of effective climate change education strategies focusing primarily on schools, Monroe et al. (2017) observe that these tend to focus on personally relevant information and the use of active and engaging teaching methods. They also note that many programmes in schools focus on implementing school or community projects, an encouraging trend given some of the research about learning rooted in action. More research is needed to be able to gauge how climate change is being tackled in Seychelles' educational institutions, in terms of content, strategy and effectiveness, but in general the approach is to support project-based learning, much of which is done through the EcoSchools programme and extracurricular clubs.

Aside from providing opportunities for participants to take action and develop a sense of agency, in her review of the field of climate change communication, Moser (2017) notes that many researchers are looking at the role of values in bringing about change. Studies of the role of values, beliefs, worldviews, identity, and meaning-making in climate change are becoming increasingly popular, and researchers are taking particular interest in the role of hope, optimism and positive emotions in climate change communication. This is an area of research and practice that really remains unexplored to date in Seychelles, although there are examples of efforts by environmental organizations to reach out to faith-based organizations, artists and cultural specialists – all of whom tend to be more comfortable with the exploration of values, mindsets, and emotions in their programming than may be their more science-focused environmental counterparts. Ensuring that climate change capacity-building efforts make space for participants to explore their values and mindsets would be, according to the principles for effective climate change listed above, a top priority for designing programmes that are suited to each particular audience.

In their review of climate change communication, Markowitz and Guckian (2018) conclude that climate change communication 'is hard to do well and easy to do poorly'. They share seven very practical insights to improve efforts to change people's hearts and minds and inspire them to action that echo and perhaps update the principles of the CRED guide:

1. Know what motivates the audience
2. Figure out what audiences already know
3. Confront false information, do not reinforce it
4. Find frames that 'fit' audiences' needs
5. Highlight solutions
6. Tell stories
7. Leverage the right messengers and communications channels

These authors make several general recommendations regarding new approaches that may provide some insight and direction for Seychelles. Firstly, they emphasize a continual need for experimentation with new approaches that may be able to engage multiple, diverse audiences simultaneously. This recommendation is mirrored by Moser (2016). There are plenty of examples of innovative approaches in the research to learn from, and likely some examples happening on the ground in Seychelles, albeit with no formal documentation. Secondly, Markowitz and Guckian (2017) suggest approaches that involve evaluation as well as new partnerships, giving examples of collaboration between scientists and artists and then exploring through social science research how such work influences audiences. These are both interesting propositions for climate change capacity-building work in Seychelles, however likely not exhaustive given the opportunities presented by Seychelles' tiny population, Creole cultural context, as well as the country's status and alliances as a small island developing state.

What is really needed now is for Seychellois practitioners and prospective researchers to come together to review these findings from the literature, then share strategies and explore future directions for both research and action in climate change capacity building – that will truly help build a climate resilient society.

Conclusion

Seychelles is replete with diverse attempts to build capacity for climate change mitigation and adaptation, to raise awareness of climate change and actions needed to address it, and even to engage people in those actions. These initiatives have been implemented by a range of stakeholders representing government and civil society, and the GCCA+ project is but one of several recent players in the field, building on past efforts. In some cases the initiatives have been well thought out, and based to a limited extent on international research findings in effective climate change communication strategies.

Moving forward there are opportunities now for climate change communicators to take stock of what has been done, how effective these approaches have been in Seychelles, and to craft future strategies that take into account both recommendations made by researchers in the field, as well as insights from local knowledge about values, mindsets and cultural practices prevalent among target audiences in Seychelles. Fortunately, as a starting point, the forthcoming UNFCCC Third National Communication makes provision for such work and will entail a detailed study on the effectiveness of climate change capacity-building efforts over the past decade. Further study into the psychology of climate change communication within the local cultural context is another potential area for further research that will have multiple benefits for building greater climate resilience in Seychelles.

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Appendix

General status of education, awareness and training activities from the NCCS (GoS, 2009)

Table 1. Summary of status of NCCS capacity- building actions

5.1 Develop climate change education and communication	
Actions	**Current status**
5.1.1 Develop and deploy climate change curriculum and teacher support materials in Seychelles Schools	Curriculum support materials have been produced for primary and secondary schools focusing on climate change, water, and energy, and climate change resources for post-secondary education in tourism, construction and agriculture. Curriculum in need of further CC integration but many teachers do address it across various subjects.
5.1.2 Design and implement climate change educational and advocacy activities	A wide range of activities have been held including school-based projects, competitions, public speaking, as well as public exhibitions, rallies linked to the global climate change advocacy movement, info sessions on renewable energy, community workshops on climate change adaptation etc.
5.1.3 Integrate climate change education in all relevant national policies and strategies.	This work is only now beginning to take shape, with support from the GCCA+ project. University of Seychelles and the TGMI are working on integration of CC education into their programmes. SIT and NIHSS have begun process of integration CC into their strategies and programmes, with support from GCCA+ and (for SIT) other partners like the SEC and GEF projects.

5.1.4 Organize awareness and educational activities for the youth.	Many activities focused on CC targeting youth have taken place but primarily for specific groups e.g. members of environmental youth groups and clubs, not the general populace.
5.1.5 Promote ongoing stakeholder/community involvement in decision making regarding climate change education, awareness & training at national and district levels.	The NCCS education chapter was drafted with stakeholder input as was the SSDS. Validation workshops are regularly held to gain stakeholder input into proposed curriculum support materials. The GCCA+ capacity needs assessment gathered input from senior government officials regarding training needs in diverse sectors.
5.1.6 Develop capacity for emissions trading and carbon management with focus on CDM, NAMA and other mechanisms.	Some local and overseas in-service training for technicians has been offered. These topics are addressed in the BSc Environmental Science programme, and will be addressed in the new MSc programme.
5.2 Implement climate change awareness at all levels	
5.2.1 Identify gaps in communication and implement awareness raising activities within government, private sector and other organizations.	The GCCA+ capacity needs assessment addressed this to some extent and several surveys have been undertaken by government and civil society to assess public awareness of climate change. Workshops in climate change communication have been hosted by the GCCA+ with the EBA project, and further training in this area is planned in the short term. Awareness workshops for different sectors e.g. construction, health, tourism have been hosted by various partners including NGOs and the GCCA+.
5.2.2 Integrate CC education into all sectoral policies and strategies, i.e. Energy Policy, Agriculture Policy, Education Policy, and National Environmental Education & Awareness Strategy, etc.	This has only been fully completed for the Agriculture sector, but other sectors are working on updated policies with support from the GCCA+ programme. The Ministry of Health has a CC action plan but has not yet integrated CC into its general policies or strategy.
5.2.3 Identify vulnerable groups and prioritise for capacity-building activities to address climate change risk.	Several vulnerability assessments have been undertaken but these focused on the country and not on specific target groups.
5.2.4 Develop communication and awareness strategies to engage the community in responding and adapting to climate change.	Seychelles Energy Commission developed and then updated an energy education strategy with input from stakeholders but no formal strategy specifically for CC exists. The SSDS addresses strategies for education for sustainability targeting different audiences. Further work is needed to improve effectiveness of strategies.

5.2.5 Identify the main gender issues in connection with climate change and implement capacity-building programmes to address any specific gender-biased needs.	Some work has been done in this area around food and water security, providing workshops for women in home gardening and rainwater harvesting, a collaboration between government and civil society.
5.3 Strengthen formal climate change capacity-building institutions	
5.3.1 Introduce climate change research and adaptation training at university level	Climate change has been integrated into the BSc Environmental Science programme at the university of Seychelles and will be a key theme in UniSey's new Masters in Marine Science and Sustainability. The Masters in Sustainable Tourism also addresses climate change related topics as they relate to tourism. The TGMI is also working on integrating CC into their diploma and certificate courses, with support from the GCCA+ project.
5.3.2 Develop and maintain a knowledge-base and an international network of resources for climate risk reduction.	Government agencies, the University of Seychelles and other education institutions as well as civil society organizations are continually developing new partnerships to expand their network of resources. However these partnerships are not centrally coordinated, nor is there a database to keep track of any network of local and international resources.
5.3.3 Integrative and adaptation leadership training in 'Climate change, climate variability and coastal security'	Various one-off workshops have been held for different organizations such as DRDM, the Seychelles Meteorological Authority and the Ministry of Environment but little tracking of training materials or impact. Training has mainly been led by international partners (e.g. the World Bank, JICA, Meteo France, etc.)
5.3.4 Development of appropriate modes of learning for adaptation at all levels and sectors of society, including aspects of empowerment at the local level	Some work has been done by NGO's and through government led projects, working with the community on ecosystem-based adaptation. This has not been monitored or documented in any systematic way, or followed any systematic methodology.
5.3.5 Establish a system of sustainable financing for climate change education, awareness and training programmes.	This has not yet been achieved. Most initiatives are financed through grants as part of either NGO or government led projects. In some cases the private sector has also contributed.

5.4 Develop the capacity for global environment management, in particular climate change	
5.4.1 Develop capacity for negotiations at international level	The GCCA+ recently hosted a workshop in climate change negotiation and the production of a manual for negotiators. More young people are being sponsored to participate in the Seychelles delegation to COPs to gain experience in negotiations. The MEECC has recently created and filled a post for a climate negotiator.
5.4.2 Develop policy research projects focused on analysis of global policy and mechanisms in relation to the specifies and priorities of small island states.	The MEECC now has two policy analysts for climate change and one for energy and some water policy research has been undertaken. UniSey and the Blue Economy Institute provide opportunities for further work in this area.

Michele Martin holds a PhD in Environmental Studies from York University in Canada. Her work focuses on education for sustainability, and has become increasingly enmeshed with the need for urgent action to address the global climate change crisis. Most of Michele's work centres on Seychelles, and ranges from working with students and teachers in formal education institutions, to work with communities, the private sector, and governmental organisations – all towards the goal of creating a more sustainable society through education, awareness and other capacity-building programs. Michele is currently part of Seychelles' GCCA+ project team, coordinating the implementation of GCCA+ climate change capacity-building activities.