

Report of a Scoping Visit to Mauritius

Demand Articulation for Capacity Development in Ecosystem Restoration and Management for Small Island Developing States

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Mauritius: first impressions

“No English, only French”, says the driver who comes to pick us up from the airport. “Bien sûr, pas de problème”, we answer. The one hour drive to the other side of the island shows us endless sugar plantations on both sides of the road. Our hotel in Flic en Flac (French adaptation of the old Dutch name Friedland Flaak) is at a public beach. Across the road you can see the beautiful blue sea between the cars that are parked among the Casuarina trees. Under the shadow of these alien species, families are enjoying a picnic or relaxing after swimming.

The students we see in the canteen of the University at Réduit all seem to have a sparkle in their eye. We ask some boys and girls what they want to do with their lives and they talk freely about their aspirations to work in business or become teachers. The coffee in the university canteen is good and costs ten times less than the coffee we drink later in the marina shopping mall in the capital St. Louis. There on a small square of the Caudan Waterfront, techno rock blasting from some speakers attracts teenage girls to sign up for education in fashion production and design. A joint venture between ITVB school of design and Compagnie Mauritienne de Textile. A few exhibits show what you can learn and when you finish you have a guaranteed job. A dozen girls seem excited and are filling in forms.

On our way to the South, we pass through a forest. We try to spot some native trees, but all we can see are pines and Chinese guavas. A bit later on the South West coast, we are surprised by a quick succession of top class resorts and low-life shacks. We wonder whether the people living there will gain anything from tourism. Close to Rivière des Anguilles schoolchildren are queuing up to get into the visitors centre of the Park La Vanille. Naturally curious, they stretch out their hands to experience what a tortoise feels like. The next generation to inherit the ‘Pearl of the Indian Ocean’, as Mauritians call their island.

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Management Summary

IUCN is engaged in a portfolio of projects funded by the Italian Government (DGCS) to support Small Island Developing States (SIDS). One of the elements of the portfolio is a project to articulate the demand for capacity development in ecosystem management and restoration among key sectors in SIDS. The idea of this project is to generate a programme outline of priority interventions for capacity development, based on a global survey of demand and supply and to generate first (web-based) tools for ecosystem management capacity development.

Capacity is the combination of human resources, institutions, and practices that enable a country to achieve its development goals. At the individual level capacity development refers to changing attitudes and behaviours, imparting knowledge and developing skills while maximising the benefits of participation, knowledge exchange, and ownership. At the institutional level, capacity development focuses on overall organisational performance and functioning capabilities, and the ability of an organisation to adapt to change. At the systemic level, capacity development emphasises the overall social and policy framework in which individuals and organisations operate and interact with the external environment, as well as the formal and informal relationships of institutions.

For the IUCN project team the scoping visit to Mauritius was a good introduction to with major socio-economic issues SIDS are facing, the impact of these issues on ecosystems and the challenges for capacity development. It is clear that on small islands one better not differentiates between various ecosystems, but see the whole island as one ecosystem, from the mountains to the coral reefs. Integrated planning in stead of making different development plans for different economic sectors or different areas on the island is the way to optimally take environmental impacts into account. It seems that currently in environmental policy the focus is more on legal instruments, and less on implementation, enforcement or on financial and social instruments: capacity development challenges at the systemic level.

Tourism and the conversion of land into new 'uses' (in Mauritius the conversion of sugar plantations into pastures, forests or real estate development) provide new opportunities for ecosystem restoration and management. It is not clear how well prepared the conservation community (including government institutions and NGOs) on Mauritius are to make optimal use of these opportunities. Here capacity development challenges seem to exist at all three levels. The system is not yet fully ready for stakeholder engagement and public participation. The mission of some organizations may not yet allow for such an approach. In other organizations the necessary negotiation and planning skills may be lacking. And in other instances respondents indicate that they lack specific practical restoration knowledge and skills.

One of the main obstacles for integrated planning seems to be culture of non-sharing of information, both inside institutions as between institutions. There is a great need for horizontal communication between the various 'silos' of disciplines, sectors and stakeholder groups. Respondents all acknowledge this fact and often indicate that the main problem is that high officials in the government are not sufficiently aware of the importance of the environment. At the same time it appears that the conservation community itself is not sufficiently able to phrase environmental issues and concerns into the language that political and economic decision makers best understand.

Mauritius has a sophisticated capacity development infrastructure. Good primary and secondary education. The University of Mauritius, the Mauritius Institute of Education, the hotel school etc. There are a range of opportunities for training and professional updating of civil servants. Yet various respondents indicate that a variety of important knowledge areas are missing on the island. They indicate that most useful individual learning takes place through face to face peer exchange and review. Both with experts from the region as from countries like Australia, the U.K. or Canada. Exposure to new ideas from abroad is highly valued.

For the IUCN SCDC project to support SIDS in capacity development for ecosystem restoration and management, it seems important to focus on ecosystem services rather than on ecosystems. It also should focus more on socio-economic changes that impact on ecosystems services and on government and NGO end users. On the basis of the interviews a global survey can be developed by the IUCN team and a first generic advocacy tool can be developed. It is important to note that interventions most needed seem to be related to facilitating knowledge and expertise sharing on a regional and global basis in a range of content areas: ecosystem; basic environmental awareness for decision makers; integrated planning and innovative conservation financing mechanisms.

Introduction

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IUCN and its members and scientific Commissions may well have a significant contribution to make to capacity development in SIDS. It has programmes on water and on forest restoration, as well as knowledge on Green Accounting and Ecotourism. In the Commission on Ecosystem Management it has a global network of specialised ecosystem restoration and management experts. IUCN also has various other global and regional knowledge networks: the World Conservation Learning Network (WCLN) is a global network of Institutes of Higher Education. Another relevant knowledge network is the Conservation Commons. Both from the perspective of knowledge networking and from the perspective of content, IUCN could be well placed to play a brokering and advisory role. IUCN is a neutral and credible platform. And IUCN - in having a long tradition of working with governments and NGOs - speaks the language of government decision makers and of civil society.

IUCN first started a number of interviews¹ with experts from various SIDS regions to get a global overview of the issues and trends in SIDS, and the capacity issues linked to these. The scoping mission to Mauritius was undertaken to have face to face encounters with key leaders of different sectors, and to get a more in-depth idea of stakeholders views on capacity building demand and supply issues in a specific SIDS. On the basis of the interviews and the Mauritius visit, IUCN will organize an expert meeting to outline next steps, such as a global web based survey on capacity development demand and supply. The results of the survey will be validated in three regions and will provide input for a review meeting to be held in November in Sardinia.

The demand articulation² mission to Mauritius set out to answer a series of specific questions (see Annex 2) which were put to each interviewee. The mission carried out some 20 in-depth interviews with over 30 resource persons (see Annex 1) based in Mauritius from government agencies, NGOs, the private sector and international organizations. Apart from environment and conservation organizations, interviews were also held with people active in agriculture, fisheries, shipping and tourism, to get a much broader view on the country's environmental capacity needs.

By contrasting and comparing answers from different stakeholder groups to the questions and to the literature collected (see Annex 3), a number of proposed entry points for capacity interventions were identified and shared with local stakeholders during a debriefing meeting held at the offices of the National Parks & Conservation Service near the end of the visit. At that meeting, the IUCN team presented its preliminary findings in order to get feedback from the people in attendance. The presentation summarizing the findings as well as a short report of the discussion that ensued and a list of participants is provided in Annex 5 and 6.

The IUCN mission was carried out between Saturday 6 May and Tuesday 16 May 2006. It was carried out by a team consisting of Simon Rietbergen, IUCN Ecosystem Management Programme, Ebenizario Chonguica, IUCN Southern Africa Regional Programme Coordinator and Frits Hesselink, HECT Consultancy and IUCN Commission on Education and Communication. The mission would like to thank Dr Rajen Sookhareea and Ms Y. Luttoo from the National Parks and Conservation Service (NPCS) for the logistical support they provided. They also are extremely grateful for the willingness of all respondents to share information and help the mission to achieve its objectives.

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¹ See Demand Articulation for Capacity Development in Ecosystem Restoration and Management for Small Island Developing States, Report of a Series of Telephonic Interviews by Frits Hesselink, see Annex 7.

² For more information about needs assessments, demand articulation and end user participation see Annex 4.

1. Most urgent social-economic trends and issues in Mauritius

Through the interviews, visits and documentation a rough overview emerges of the main socio-economic issues the island republic faces. Mauritius is a young democratic society well on its way to adequately managing its three traditional economic sectors (sugar, textile, tourism) and to diversify its economy despite limited human and natural resources. There are relatively few small and medium enterprises. The souring Asian economic model (India, China, Singapore) is also influencing the various national dynamics. Pressing issues are: unemployment; poverty; health, education and 'attitude' issues (e.g. lack of awareness of the importance of environment or ecosystem linkages); over-regulation, poor law enforcement; increasing costs of energy and environmental degradation. Some respondents formulate it as follows:

"Major issues in our society are 1. poverty - many people have no access to education, housing, water, sanitation; 2. corruption - all levels of society are involved in money laundering, commissions and bribes to get approval of projects, licenses, EIA's or overlooking regulations etc.; 3. health crisis - HIV Aids and Chikungunya - taking away big portions of the workforce and adding to the lack of human capacity and competences."

"Uncontrolled importation of plants poses a major threat to many of the island's terrestrial ecosystems."

"Weak and narrow economic base, fragile to external shocks, there is a need to diversify but there are only a few alternatives."

"The school system breeds clones instead of freeing minds, people here do not easily take initiative or want to move on to a function with more responsibilities."

The trend in answers from civil society seems to focus on social issues and the need to expand and diversify the economy, and the likely environmental impact of increased tourism etc. Their thinking seems to be rather pro-active.

Government institutions seem to implicitly accept the trade-offs between development and biodiversity conservation, with many sectoral agencies arguing for strengthening their own capacity to manage likely impacts. Thinking seems rather reactive than pro-active.

International organizations seem to look at Mauritius more at a "macro" level, focusing on bigger picture issues, many of which are shared with other islands – such as the narrow economic and skill base.

Respondents from the private sector seem to have a tendency to argue for proactive investment in making economic alternatives possible, e.g. investment in public infrastructure and in safeguarding environmental assets on which tourism depends; in education; in new sources of energy and in integrated conversion planning of sugar plantation land.

Reflection

For outsiders it seems that diminishing employment in the agricultural and textile sector is a key issue, next to the planned expansion of the tourism sector and several health, education and social issues. The challenge for ecosystem management and restoration could be to see where in these areas the conservation knowledge and approaches could be an answer to some or part of these challenges in society.

2. Ecosystems most under pressure as a consequence of these trends

The island of Mauritius is actually one ecosystem. Coastal waters are threatened by inland pollution from industrial and urban centres. The main threat to native species is depletion of native forest and alien invasive species. Underlying causes are poor land-use planning, long term mono-crop type of agriculture, poor law enforcement, lack of proper infrastructure and lack of awareness. Tourism – if well-managed – is not a threat but an opportunity for nature conservation. The National Capacity Self Assessment³ provides a complete overview of all environmental issues on Mauritius and Rodrigues (the other main island of the republic) and their root causes. Some respondents formulate the most pressing ecosystem issues as follows:

“People without land and housing create shanty towns in areas without people but with rich biodiversity.”

“Because of agricultural expansion less than 2% of our native forest is left; nature is not managed as an opportunity for society.”

“Much of Mauritius’s main island ecosystems are under pressure, but chances of successful restoration are limited because of invasive species problems.”

Mauritius is not under any major threat environmentally. But there is a need to develop capacity for management of marine environment (marinas, regulations and enforcement) and integrated conversion planning for sugar plantation land.

The trend among civil society seems to identify almost all island ecosystems as threatened, from the corals via the coast and freshwater ecosystems up to forests and mountains – with emphasis on the impact of invasive species on terrestrial ecosystems.

Government institutions interviewed have a similar realization that many ecosystems are threatened, but seem to “explain away” the environmental impacts. Degradation seems to be viewed as “inevitable”, or the consequence of the actions of departments not having enough human and financial resources.

International organizations seem to make neutral statements re impacts on different ecosystems on Mauritius.

Among respondents from the private sector there seems to be a diversity of views regarding how serious the environment is affected. Most of them are rather critical of the government’s performance in this field at institutional and systemic level. A new element seems to be the identification of conservation and ecosystem restoration and management as an opportunity, especially for tourism development and for the conversion of agricultural land.

Reflection

In some government agencies and some NGOs dealing with biodiversity the paradigm of nature conservation seems to focus on species and their habitat and some see society as the major threat. It seems that a more modern paradigm of nature conservation as a service to society is not yet fully understood by all parts of the Mauritius conservation community. Similarly, it seems that sustainable development is not fully understood as an opportunity for conservation. The challenge for the conservation community seems to be to rethink the most appropriate positioning of conservation within the current and likely future socio-economic context of Mauritius to day and the next ten years.

³ National Capacity Self Assessment, Ministry of Finance and Economic Development and Ministry of Environment and National Development Unit in collaboration with UNEP & GEF, October 2005

3. Key actors on Mauritius that can realize a change in the negative impacts on ecosystems

The government - as regulator in Mauritius - plays an important role in changing practices that have a negative impact on the environment and in bringing about a better climate for investment in sustainable management of natural resources. The private sector and NGOs already take the lead in a number of important initiatives. Public opinion can be an important driver for change in policies and practices. Research and educational institutions are important for knowledge generation and sharing, and to shape new attitudes and practices.

International organizations have a number of ongoing initiatives in Mauritius that contribute to a positive change. Government actors not traditionally involved in conservation (e.g. planning, energy, ports/transport) also have a significant role to play. The actors directly involved in the conversion of agricultural land into forest and pastures for deer ranching, ecotourism and real estate development, are another important group: the Chamber of Agriculture, the Mauritius Meat Producers Association, banks, real estate developers and brokers. There is a broad variety of opinions which institutions are most crucial for a positive change. Some respondents formulate the most important actors for change as follows:

“Government - only they can change things. Government needs to be more proactive in identifying and addressing upcoming environment & development problems in key economic sectors, e.g. transport and road infrastructure.”

“It should start at primary school”.

“Local NGOs and local community leaders have the potential to make a difference.”

“We have to change from a sugar culture to a tourism culture. There should be a National Parks Board operating like a private organization, with clear responsibilities and tasks, answerable to government. This would allow for nature to be managed as the major tourism opportunity it is.”

Civil society seems to be very critical of government, especially of its tendency not to share information, either across government agencies or with the general public. Some argue for an increased role and responsibility of the private sector in environmental management and nature conservation. Others argue for more regulation and more and better enforcement.

Government institutions seem to “explain away” poor government performance in the environmental sector because of limited resources and capacity – they do not address issues of dysfunctioning of the overall government system.

International organizations seem to have many good suggestions to focus on improved regional collaboration, enhancing the capacity of the government to be more strategic and proactive.

The private sector seems to emphasize the need to deregulate and streamline government procedures, while strengthening key tasks such as Environmental Impact Assessment and strategic investment in environmental management infrastructure. Some think that a complete overhaul of the Civil Service is necessary. Others have concrete suggestions that the government should - on a very regular basis - communicate with and facilitate interaction between all stakeholders.

Reflection

For outsiders being in Mauritius for such a short time, it is difficult to claim to be able to identify the most important intervention points for capacity development for a positive change in managing and restoring ecosystems. From the interaction with the various respondents it seems though that there could be three areas that can leverage a positive change in the near future. First, the integrated conversion planning in the next ten years of 10.000 ha of sugar land involving a voluntary reduction of roughly 8.000 farmers. Secondly, the management of the coastal areas where the interests of tourism and of nature conservation appear to coincide. Thirdly, the marine conservation management of the extended economic zone of almost 2 million km².

4. Implications for capacity development at system, organization and individual level

In 2004-2005, the Government of Mauritius carried out a National Capacity Self Assessment (NCSA)⁴ in the field of the major environmental conventions, in consultation with a broad range of stakeholders and with support of a GEF-UNEP project. The report contains long lists of capacity needs at various levels for a number of actors and a variety of themes. It provides detailed information about the major environmental issues and their root causes. It sketches a way forward and it is clear that any capacity development activity in the field of ecosystem management and restoration should position itself within this framework and take advantage of the work done under this assessment.

The NCSA unfortunately does not identify what can be done in the short term and what stakeholders are prepared to do. IUCN through its demand articulation should attempt to add value to the Self Assessment - in the field of ecosystem management and restoration - by trying to identify priorities or key entry points for change where capacity development can help. Interacting with civil society, government, international organizations and private sector, it becomes clear that for ecosystem management and restoration a great variety of capacity development interventions are needed at various levels. Many respondents think that top decision makers in government are not sufficiently aware of environmental issues and the need for an integrated approach to planning. Some respondents have clear priorities:

“Raising awareness about threats to native species with all sections of Mauritian society is a key area for capacity development, both in NGOs and government. The Ministry of Environment needs to develop capacity to apply environmental laws better, e.g. ability to identify threatened plants and animals for land use zoning purposes.”

“We did a survey of capacities needed for GEF in our National Capacity Self Assessment. The most important issue in my view is that conservation agencies, e.g. NPCS and NGOs have no idea of sustainable development and the others, e.g. Ministry of Agro-industry have no idea of ecosystem management and restoration. Most important content areas: adaptive management, crisis management, risk management, conflict management.”

“Most institutions are sitting on their knowledge and do not share. Even in the institution itself information sharing is rare.”

“We need simple messages for the general public and decision makers. Need to make children more familiar with plants and animals – schools are currently overly academic.”

“There is a need to review and streamline mandates of different government agencies, seeing who does what and how. Some aspects, such as freshwater biodiversity, fall between the lines while others are overlapping. Problems in solving this are largely political. Higher levels of government need broader awareness of environmental concerns, e.g. climate change impacts, energy saving policies. Landowners and tourist industry need improved capacity to take into account environmental issues.”

“ We need resource centres mainstreamed to local government capacity needs, children and civil society at large. Government needs to be more proactive in identifying and addressing upcoming environment & development problems in key economic sectors, e.g. transport and road infrastructure. Government in general should reverse the culture of ‘over-regulating’ and being too compartmentalized.”

Civil society in general tends to have long lists where the capacity of government should be strengthened especially at systemic and institutional levels. They also have a long list of specific capacity development needs for themselves, basically at the individual level and some very practical.

⁴ National Capacity Self Assessment, Ministry of Finance and Economic Development and Ministry of Environment and National Development Unit in collaboration with UNEP & GEF, October 2005. The Assessment basically looks at needs and opportunities for synergies between the three conventions. It provides guidance how to take next steps at the systemic level and institutional level. First of all to coordinate input into the international processes and improve communication of the results of international processes to the various stakeholders in Mauritius. Most of the recommended capacity interventions in the assessment focus on individual training and research.

Government tends to think immediately in very sophisticated capacity development interventions on the institutional (e.g. needs facilities for tissue culture) and individual level (training and Ph.D.), or thinks in terms of more equipment, vehicles and staff.

International organizations tend to have a more sophisticated approach that differentiates between the systemic and other levels and have suggestions for all levels. They are also engaged in several capacity initiatives at various levels.

The private sector is placing ecosystem capacity development in the development of their specific sector. They point to the capacity to be build at the systemic level, but also at the institutional changes that are needed to integrate environment more in day to day business and the very practical new skill sets that are needed at the individual level. In the tourist sector quite a few initiatives are underway, both by individual entrepreneurs, and by their associations.

Reflection

In the field of integrated conversion planning of sugar plantation land, agencies dealing with conservation and environment should see sustainable development and partnerships with the private sector not as a threat but as an opportunity. What comes to mind as a first opportunity is raising awareness about environment and practical training in integrated planning of conversion of sugar plantation land into other forms of land use among affected farmers and training farm-workers to plant trees and create new forests. The stakeholders should meet regularly to build up trust and vent opinions, fears and ideas. This could also help to overcome the systemic lack of information sharing.

Such a public-private partnership also would put environment on the agenda of top decision makers in several ministries. As they are involved and need to take the initiative, they will increase their awareness of some basic linkages between environment & conservation and economic development and the need for integrated planning. NGOs would have to build up their capacity to become full fledged negotiating partners to create opportunities for restoration and new mechanisms to finance conservation. Conservation departments would need a similar capacity to engage in such a process as an equal partner. International organizations could be well placed to help here.

In the field of tourism and coastal ecosystem restoration and management and the management of marine resources, similar capacity partnerships could be developed. In agencies and departments dealing with environment and conservation, it would also mean practical knowledge at the individual level of a range of ecosystem restoration and management interventions, e.g. beach restoration and coral reef management, waste management, prevention of invasions by alien species, proactive infrastructure planning and implementation.

5. End users

End users are those individuals who make use of the capacity development interventions: the captain or crew of a new boat, the civil servant operating a new decision support system, or a worker in or outside a protected area, applying a new technique for coral reef restoration. In a demand articulation survey, once the key entry points and institutions for change are identified, and capacity development needs at the three levels are formulated, the end users are analyzed. It is important to know their prior knowledge, their attitudes towards the changes and learning, their preferred way of updating their professional knowledge before deciding on the type of capacity development interventions. In Mauritius, only at the very end of the mission did IUCN staff get an idea of possible entry points for change, and could not further explore end users motives and preferences for capacity development in detail. The question was pursued in general and therefore got rather general answers.

Civil society tends to mention all groups, from school children to government officials, NGO staff and politicians. Government institutions also tend to mention all groups (leaving out politicians), but also including training of Mauritians in specialized fields abroad. International organizations tend to put more emphasis on training at decentralized level and on regional collaboration for training according to comparative advantages. The private sector tends to mention specific groups according to specific needs in their sector. Some respondents formulated it as follows:

“Highest government officials;”

“End users are e.g. those working in municipalities in sewage and waste management, town and spatial planning, land use, agriculture and forestry;”

‘All organizations involved in conservation need to learn how to engage in the right partnerships, how to identify valid expertise from other islands and bring it in. Need to move people and expertise around the world, and develop partnerships and collaboration with other proactive islands.’

Reflection

If land use conversion is a real entry point for change and Mauritius embarks on capacity development interventions for integrated conversion planning of sugar plantation lands, it will be necessary to analyze the end user groups before starting any programme of capacity development interventions. It would be important to analyze what would make farmers want to refrain voluntarily from planting sugar, and what would motivate them and farm workers to engage in ecosystem or forest restoration activities; what their prior knowledge is of tree species, planting methods and other related skills, what way they learn best and like to learn best. The same is true for all those with a stake in land use conversion, from government, land owners and other actors in the private sector, to NGOs and academia. What is said here for the land conversion also applies to marine and coastal management.

6. Most effective types of capacity development to meet the demand

Capacity development interventions range from training and retraining, to equipment, decision support systems, change in organizational procedures and culture, or systemic changes in law and infrastructure⁵. The most effective type of capacity development is the one that meets the demand. The demand should be related to specific end users in specific institutions to bring about change on a specific issue.

As was stated previously, IUCN was not able to identify those key leverage points and organizations in an early stage. So pursuing this question in general, respondents came up with general answers or answers that were based on the needs in their own field of work. Awareness raising, learning by doing, peer exchange, and on-the-job professional updating were mentioned most. Web based tools were not seen as needed. They stressed it should not be theoretical but hands on and practical. Short face to face interventions over a long period of time were the preferred way forward for most respondents.

“We need applied science; holistic thinking; legal aspects; planning and management skills including fundraising; communication skills.”

“Get Mauritians in an airplane and see how they do it elsewhere, e.g. Table Mountain in South Africa. Show how the idea of nature development, which is absent here, can work in practice.”

“Do not go for big meetings and workshops; there is a need to create visibility of what works and what does not work.”

“A lot of capacity can be built on the job, e.g. 300 BCM employees have learned lots.”

Civil society tends to come up with many specific suggestions for capacity building for different groups of end users, focusing on practical not specialized technical skills.

Government institutions tend to focus on a mix of specialized technical training and practical, on-the-job training suggestions, including long-distance learning. Emphasis is on training in Mauritius and not abroad.

International organizations tend to look at capacity building interventions linked to a mix of measures to put in place concrete incentives for improved environmental performance. They seem to emphasize policy-level training, although they see some obstacles in realizing this.

The private sector seems to focus on improving the education of school children and on capacity building at systemic level – such as setting standards or enforcing laws. As to capacity development in tourism and land conversion, they are thinking of short practical courses in partnership with government and Mauritian capacity development institutions (University, hotel school, private sector associations).

Reflection

It will be most effective to link capacity development to concrete changes that immediately affect ecosystems, e.g. the conversion of sugar plantation land or the further development of tourism in the coastal areas. The mix of interventions has to take into account specific changes aimed at in the three capacity development levels⁶ and the various interventions have to be creative and practical. The need for participation of end users in identifying the right mix of interventions is crucial. Capacity development can not be planned from behind desks in offices. Much has to be done through interaction with stakeholders and through learning by doing. Stand alone training workshops – although informative at the individual level – are unlikely to generate much impact if they are not linked up with efforts at institutional and systemic level..

⁵ For more background information on capacity development and demand articulation see Annex 4.

⁶ For the three capacity development levels (individual, institutional and systemic) see further Annex 4.

7. Local supply mechanisms and need for additional supply

A next step in demand articulation is to look at which local capacity development supply mechanisms can meet the demand, articulated in the previous steps. As stated above in this short mission IUCN did not come that far, but pursued this question to at least get some general answers. From these answers it is clear that Mauritius - compared to many other small island developing states - has a very good infrastructure for capacity development. Mauritius has a robust civil service. It has associations in the private sector, such as the Association of Hotels and Restaurants in Mauritius (AHRIM) and the Chamber of Agriculture. There is the University of Mauritius, the hotel school and a range of further education opportunities for civil servants. Various consultancies are offered by the private sector and NGOs. There is a lot of restoration and ecosystem management knowledge in NGOs, e.g. the Mauritius Wildlife Foundation, Reef Conservation etc. Still additional expertise is necessary according to some of the respondents.

“Formal and informal education, with hands-on experiences and a central role for the learner. Promotion of diversified training: Organized locally rather than overseas to the benefit of much larger number of individuals. We need to strengthen our own institutions.”

“The University of Mauritius does not have all the expertise we need, e.g. veterinary expertise, marine biology and a lot of “specialisms” for which we have to go to academic institutions abroad.”

“Need to bring in new awareness raising skills from outside. It has to come from abroad. Under the guidance of NPCS, the University and MIE could be of help, foreign experts are needed to validate the information exchange and networking.”

“There is limited capacity locally for environment and sustainable development consultancy. We hire international consultants who are asked to work together with local ones. Capacity building is not explicitly in their TOR, but they do provide training and run workshops that benefit local experts.”

In some areas civil society and some government respondents have the experience that they need to bring in expatriate expertise, e.g. foreign students or postgraduates working on their Ph.D., especially as Mauritians in general do not want to work in the field.

Reflection

Specialised knowledge and experience is needed in various fields, not all of which is available in Mauritius. This knowledge is available on a regional and global scale, but cannot be accessed easily. Various respondents identified the need for specific opportunities for learning from other countries in the region, e.g. from the Seychelles re the control of invasive species, and from South Africa re wildlife viewing tourism. Exchange visits were deemed particularly effective.

8. Entry points for capacity development interventions by the IUCN/DGCS project

Capacity development is primarily the responsibility of Mauritius itself. External support can be helpful in certain areas. A number of entry points for such support along with specific target audiences and content areas are given below. All capacity development interventions should be developed on the basis of local demand and culture, add value to and piggy-back on existing or ongoing projects, and use and involve as many local institutions and experts as possible. They should also contribute - where possible and appropriate - to building social capital in Mauritius with regard to other capacity issues in the wider system. Some respondents formulate that as follows:

Do not write projects without proper local consultation and search for what has been done already in a particular field;

Make use of existing regional organization in the implementation process, including local NGOs; respect cultural dimensions of small Islands.

Put emphasis on complementing what is already going on.

The following ideas for potential successful entry points for capacity development in ecosystem management and restoration came up on the basis of a first analysis of the interviews:

Awareness of top decision makers: IUCN could assist in the production and web dissemination of a number of advocacy tools for top decision makers in different sectors in the form of scripts for thirty second sound bytes on the linkage between ecosystems and development of the sector in the language of this sector. Ten advocacy “do’s and don’ts” for conservationists intent on using the sound bytes. A generic hand-out with messages from credible personalities, could be adapted by Mauritian NGOs. They could also produce articles for the Air Mauritius in-flight magazine and video advertorials on that basis, featuring linkages between nature and development on Mauritius.

Integrated land- and sea-use planning for directors and managers in governmental departments: brokering for secondments and experts from IUCN member states who have experience in this field; setting up a database of examples of integrated land- and sea use planning.

Practical solutions to specific ecosystem restoration issues for experts in the field: identify centres of expertise in which universities and other institutions in the region can cooperate; organize learning-by-doing exchange visits; brokering demand for knowledge to CEM expertise or to existing distance education courses on ecosystem restoration and management. Extending existing university partnerships: student exchange, foreign Ph.D. research, joint courses, and joint distance education.

Innovative financing mechanisms for conservation organizations and departments: knowledge networking - stimulated by IUCN - among conservation organizations in Mauritius with other SIDS in tourism development and innovative financing mechanisms for ecosystem conservation and restoration.

Integration of environment into curricula of hotel school and formal education system: knowledge networking between UNDP-Coral Reef project, other actors and Environmental Education networks worldwide: brokering secondments from IUCN member states with expertise.

Integration of environment in disaster response and other crisis management procedures: simple three-point plans for key environmental resources to be safeguarded in emergency response phase of different types of disasters; application of “environmental flows” principles to key freshwater ecosystems in case of drought;

Reflection

The ideas did not immediately resonate with the participants of the debriefing meeting, as they were expecting more project ideas focused on concrete ecosystem restoration and management issues on Mauritius. This means that generic support on the global level, has to be linked with and add value to concrete regional and local capacity development issues and interventions on small island developing states. The first ideas formulated above have to be further validated and refined in dialogue with the Mauritius participants and the others from similar island nations.

9. Conclusions

Capacity is the combination of human resources, institutions, and practices that enable a country to achieve its development goals. At the individual level Capacity Development refers to changing attitudes and behaviours, imparting knowledge and developing skills while maximising the benefits of participation, knowledge exchange, and ownership. At the institutional level, Capacity Development focuses on overall organisational performance and functioning capabilities, and the ability of an organisation to adapt to change. At the systemic level, Capacity Development emphasises the overall social and policy framework in which individuals and organisations operate and interact with the external environment, as well as the formal and informal relationships of institutions.

For the IUCN project team the scoping visit to Mauritius was a good introduction to with major socio-economic issues SIDS are facing, the impact of these issues on ecosystems and the challenges for capacity development. It is clear that on small islands one better not differentiates between various ecosystems, but see the whole island as one ecosystem, from the mountains to the coral reefs. Integrated planning in stead of making different development plans for different economic sectors or different areas on the island is the way to optimally take environmental impacts into account. It seems that currently in environmental policy the focus is more on legal instruments, and less on implementation, enforcement or on financial and social instruments: capacity development challenges at the systemic level.

Tourism and the conversion of land into new 'uses' (in Mauritius the conversion of sugar plantations into pastures, forests or real estate development) provide new opportunities for ecosystem restoration and management. It is not clear how well prepared the conservation community (including government institutions and NGOs) on Mauritius are to make optimal use of these opportunities. Here capacity development challenges seem to exist at all three levels. The system is not yet fully ready for stakeholder engagement and public participation. The mission of some organizations may not yet allow for such an approach. In other organizations the necessary negotiation and planning skills may be lacking. And in other instances respondents indicate that they lack specific practical restoration knowledge and skills.

One of the main obstacles for integrated planning seems to be culture of non-sharing of information, both inside institutions as between institutions. There is a great need for horizontal communication between the various 'silos' of disciplines, sectors and stakeholder groups. Respondents all acknowledge this fact and often indicate that the main problem is that high officials in the government are not sufficiently aware of the importance of the environment. At the same time it appears that the conservation community itself is not sufficiently able to phrase environmental issues and concerns into the language that political and economic decision makers best understand.

Mauritius has a sophisticated capacity development infrastructure. Good primary and secondary education. The University of Mauritius, the Mauritius Institute of Education, the hotel school etc. There are a range of opportunities for training and professional updating of civil servants. Yet various respondents indicate that a variety of important knowledge areas are missing on the island. They indicate that most useful individual learning takes place through face to face peer exchange and review. Both with experts from the region as from countries like Australia, the U.K. or Canada. Exposure to new ideas from abroad is highly valued.

For the IUCN SCDC project to support SIDS in capacity development for ecosystem restoration and management, it seems important to focus on ecosystem services rather than on ecosystems. It also should focus more on socio-economic changes that impact on ecosystems services and on government and NGO end users. On the basis of the interviews a global survey can be developed by the IUCN team and a first generic advocacy tool can be developed. It is important to note that interventions most needed seem to be related to facilitating knowledge and expertise sharing on a regional and global basis in a range of content areas: ecosystem; basic environmental awareness for decision makers; integrated planning and innovative conservation financing mechanisms. The project should also explore how it could facilitate better information sharing among individuals and institutions on SIDS. On the basis of this report and that of a series telephonic interviews a focus for the project should be formulated that responds both to demand on SIDS as well adds value to ongoing initiatives⁷.

⁷ See Annex 7: Demand Articulation for Capacity Development in Ecosystem Restoration and Management for Small Island Developing States, Report of a Series of Telephonic Interviews by Frits Hesselink

Annex 1

List of respondents of the interviews during the scoping visit to Mauritius

Name	Affiliation	Email	Phone
AH-KING Jennifer	Reef-Mauritius	Jahking.reef@intnet.mu	263 1810
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Gina Bonne	Indian Ocean Commission	g.bonne@coi.intnet.mu	425 9564
BRAUNECKER Karl	Connections	connect@intnet.mu	696 9933
FLORENS Vincent	Univ of Mauritius	v.florens@uom.ac.mu	454 1041 x1497
FUKUSHIMA Yosuke	UNDP	Yosuke.fukushima@undp.org	212 3726
GARI Elena	UNDP	Elena.gari@undp.org	753 7014
GOREEBA Sunil	Board of Investment Mauritius	sunil@boi.intnet.mu	203 3800
GRIFFITHS Owen	La Vanille Crocodile & Tortoise Park	crocpark@intnet.mu	626 2503
Rachmand Jagannath	Ministry of Public Utilities / Water Resources Unit	wru@intnet.mu	465 9588
Lomush Juggoo	Ministry of Public Utilities / Water Resources Unit		467 2458
KHADUN Ashok	Mauritian Wildlife Foundation	akhadun@mwf.intnet.mu	631 2396
MONTY Jean-Cyril	Mauritius Chamber of Agriculture	mcadiv@intnet.mu	208 0812
MOODELY Daren	Association des Hôteliers et Restaurateurs	ahrim@intnet.mu	211 5630
Mosaheb Nausheen	Board of Investment Mauritius	nausheen@investmauritius.com	203 3833
NAMDARKHAN Umme	UNDP	Umme.Namdarkhan@undp.org	259 3854
PAUPIAH, S.A.	Forestry Department, Ministry of Agro-Industry and Natural Resources	spaupiah@mail.gov.mu	697 6097
PONAMBALUM P	Mauritius Ports Authority	portmaster@intnet	216 3504
ROCHECOUSTE- COLLET Christine	Association des Hôteliers et Restaurateurs	Comex.ahrim.@intnet.mu	211 5630
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Iain Watt	Reef Mauritius	iainwatt@intnet.mu	263 1810
WONG CHUNG TOI W.T.C.	Mauritius Ports Authority	mpadg@intnet.mu	206 5400

Annex 2

Format for interviews

Demand articulation capacity development in ecosystem management/restoration SIDS - Expert interviews - script

Introduction

IUCN is engaged in a project funded by the Italian Government (DGCS) to support SIDS. One of the elements of the project is to articulate the demand for capacity development in ecosystem management and restoration. The idea is to generate a programme of priority interventions for capacity development, based on a global survey. You have been mentioned to us as a key expert to help us with our task.

Questions:

1. What is your professional background and the relation in your work to ecosystem management and restoration?
2. What are today the major and most urgent socio-economic issues/trends that Mauritius is facing?
3. How do these issue/trends impact on ecosystems on the island? And which ecosystems are most under pressure as a consequence of these trends.
4. What key institutions/actors should change their practices in order reverse these negative trends?
5. What are the implications for their capacity development – what type/categories/content areas of capacity have to be developed?
6. What would be the profile of the main end-user groups for these capacity development interventions?
7. What types of capacity development delivery will be most effective for these groups of end users?
8. What local (and other) supply mechanism for capacity development can match this demand and what additional supply is necessary?
9. Final last good advice.

Annex 3

Literature collected during the scoping visit

Anon. 2005.

Mauritius in Figures 2004. Central Statistics Office, Ministry of Finance and Economic Development

Anon.

Fixed Mooring Buoys Project. Research, Restoration, Education & Training for Conservation of the Marine Environment of Mauritius. Reef Mauritius Conservation.

Anon. 2005.

Mauritius. Staking Out the Future. Ministry of Environment & National Development Unit.

Anon. 2002.

Tourism Environment Charter. Implementation Guide. Association des Hôteliers et Restaurateurs – Ile Maurice (AHRIM).

Anon.

Mauritius. Destination & Event Management. Company Profile. Connections.

Anon. 2005.

Digest of Agricultural Statistics 2004. Ministry of Finance & Economic Development.

Anon. 2005.

a) Digest of External Trade Statistics Year 2004. Ministry of Finance and Economy Development. Central Statistics Office. Vol. 22.

b) Digest of Environment Statistics 2004. Ministry of Finance and Economic Development. Central Statistics Office. Vol. 3.

c) Digest of Industrial Statistics 2003. Vol. 20. Ministry of Finance and Economic Development. Central Statistics Office.

d) digest of Productivity and Competitiveness. Statistics 2003. Vol. 7. Ministry of Finance and Economic Development. Central Statistics Office.

Anon

a) Investment Guide Mauritius. Board of Investment Mauritius.

b) Mauritius Opens to the world. Invest in Mauritius. Board of Investment Mauritius.

Anon. 2005.

National Plan for the Implementation of the Mauritius Strategy. (Coastal and Marine Resources). Inputs from the Sub-Committee on Coastal and Marine Resources. Ministry of Agro-Industry & Fisheries (Fisheries Division).

Anon.

Energy and Environment for Sustainable Development: Conservation and Sustainable use of Biodiversity. Partnerships for Marine Protected Areas in Mauritius and Rodrigues. (UNDP/GEF Medium Size Project)

Anon. 2006.

The Reef Wire. Issue 1 – January 06. Reef Mauritius Conservation.

Anon 2005

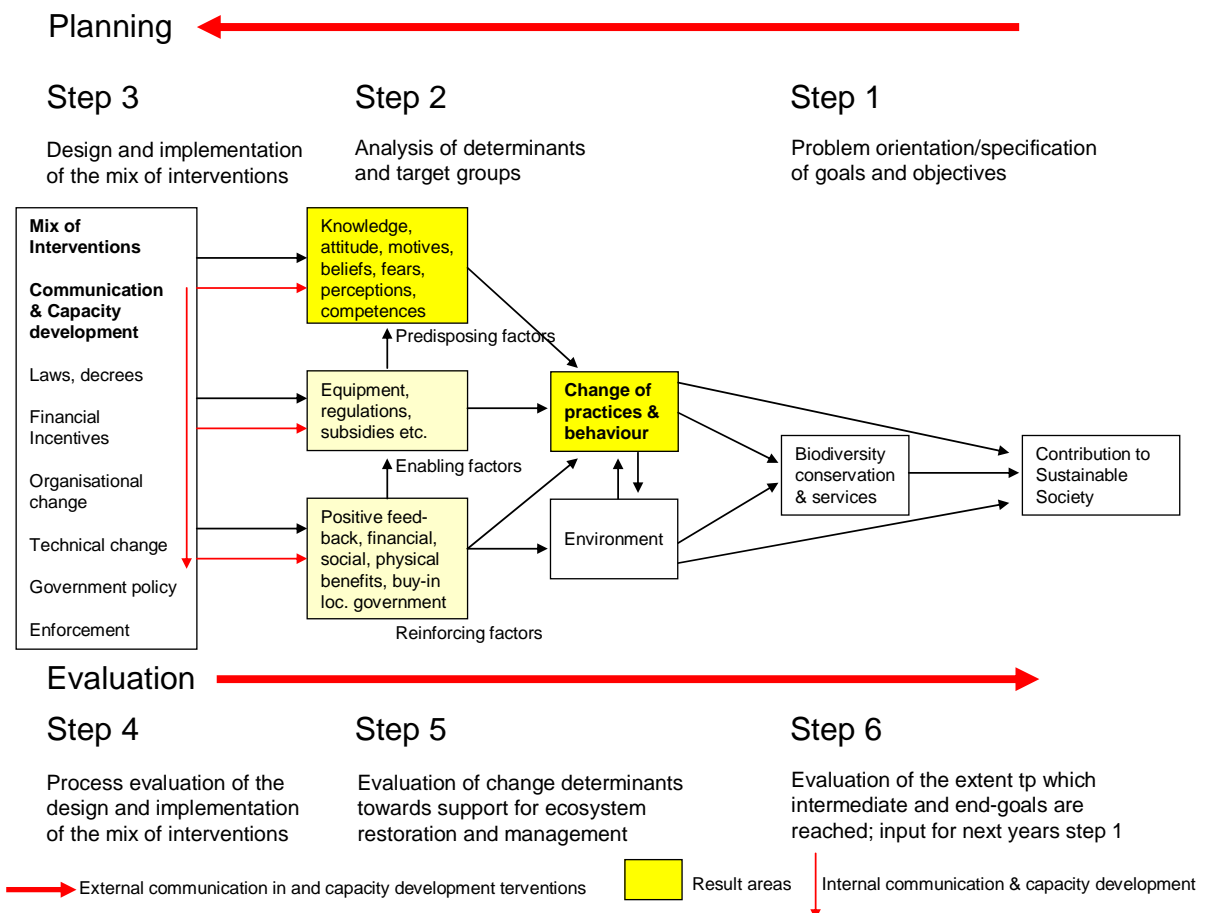
National Capacity Needs Self Assessment for Global Environmental Management - Republic of Mauritius. Ministry of Finance and Economic Development and Ministry of Environment and National Development Unit in collaboration with UNEP & GEF

Annex 4 Capacity development and Demand Articulation

Capacity development

Capacity development is managing change. It takes place at the individual level (new knowledge, new attitudes, new skills, new professional behaviour), the institutional level (new priorities, new procedures, new job descriptions, new practices) and the systemic level (new agendas, new rules of engagement, new partnerships, new ways of interaction, new attitudes towards exchange, cooperation and participation). Over the last decades a range of capacity development opportunities have emerged, that go far beyond the classical teaching and training methods of graduate and postgraduate courses and training workshops.

Two way communication has become an important part of the capacity development paradigm. Capacity development is more and more seen as an ongoing activity for each organization to better prepare itself for the challenges of tomorrow. Modern management invests regularly in capacity development as part of the concept of the learning organization. In the governmental management or policy cycle on ecosystem management and restoration, one can position capacity development and communication - its natural companion - as follows⁸:



The classical idea of capacity development – in the environment field - focuses mainly on the enabling factors, complemented by training, re-training, workshops, research, manuals and guidelines. The predisposing and reinforcing factors, are not really included in this approach. Often international training workshops end up with the wrong audiences, or with participants who cannot apply the newly acquired

⁸ Borrowed from University of Klagenfurt MSC Course Management of Protected Areas, Module 22, page 7, prepared by HECT Consultancy. For HECT Consultancy, see: www.hect.nl.

knowledge at home; either because it is not practical enough or because the organizational structure, priorities or procedures do not allow for it. And many people trained abroad do not return to their job.

Demand articulation and end-user participation

Management for change is successful when the interventions are not only based on what technically needs to be done (needs assessment), but also based on what can be done and what people are willing and able to do (demand articulation). In the end capacity development and a learning organization are about people and building human and social capital. To internalize capacity development in an organization and in its staff, it is necessary to articulate the demand side. Adults learn best when they are in control of their learning. Demand articulation therefore also identifies how end user participation in the capacity development can be organized most effectively. That makes two way communication a key element in capacity development.

The modern approach of the learning organization and learning society varies from on the job professional updating to communities of practice, inter-disciplinary learning, exchange networks and distance learning. Interventions are no longer supply driven, but demand driven. They are more ‘facilitating than teaching’ and rather offer opportunities to develop individually or institutionally than prescribe technical or social solutions. It offers an investment in the future of individuals, organizations, and societies. The following graph⁹ shows the changes capacity development today is undergoing.

From	To
Exclusive orientation on graduate and post graduate formal education	Orientation to include on the job professional updating
No linkage with latest developments	Link with latest developments and cutting-edge new practice
Use only classical teaching methods	Including new learning techniques such as learning by doing
Orientation on technical, legal and financial aspects and infrastructure	Orientation also on a variety of know-how, attitudes, skill-sets and feedback mechanisms
Stand alone initiatives	Approaches integrated in new and existing networks, link with other sectors, business and civil society
English language	Local language
Supply oriented	Demand oriented

Centres of expertise can play an important role in bringing together - on a regional basis - demand and supply. Face to face exchange is complemented by various methods of on-line exchange and on the job professional updating. Learning management monitors and evaluates with the end users the process and the linkages between the different levels (individual, etc.).

⁹ Borrowed from the 1995 IUCN concept paper New Learning for Sustainable Solutions by Ger Bergkamp, Frits Hesselink and Keith Wheeler.

Annex 5

Draft notes for discussion during Mauritius debriefing meeting

Powerpoint presentation Eben

Annex 6

Report of debriefing session

A debriefing meeting was organized at the end of the IUCN visit, on Monday 15 May 2006, to share the preliminary findings of the team with a range of stakeholders in Mauritius. After the presentation of the findings (see Annex 5), a lively discussion ensued. What follows is a brief summary of this discussion and a list of meeting participants.

After the presentation, one meeting participant said that everything proposed by the IUCN team was already being done in one way or another. The IUCN team argued that this was on purpose, because we were not in Mauritius to reinvent the wheel, but to identify capacity building interventions that could strengthen and complement ongoing efforts.

The team explained that what we were interested in was not so much the objective capacity needs, but rather the subjective demand for capacity, i.e. what real people are interested in implementing now and what the missing capacities for this implementation effort are.

Capacity building interventions will be needed at three levels: systemic, organizational and individual. The systemic and organizational level are the responsibility of the Mauritian government and of Department Directors respectively, what we are interested in are individual level capacity building efforts that create a demand for interventions at other levels.

The IUCN team found that there seems to be a kind of deadlock currently at the systemic and organizational levels: there is very little info sharing and most (government?) institutions see each other as competitors, not potential partners.

A meeting participant mentioned that high-level decision-makers are not interested in the environment, and that setting up a system of "green accounting", which is in the 2005-2010 plan, could help to convince these decision-makers to invest in environmental management. Another participant agreed that this was highly important, given the fact that the government has ambitious plans to expand tourism, but is not making the investments in ecosystem management and restoration needed to ensure that Mauritius will stay an environmentally attractive destination. ("Government wants to keep milking the cow without feeding the cow").

The IUCN team agreed that there are few signs that higher levels of government see environmental management as a high priority. It also remarked on how in many countries nature is not seen as being just the responsibility of the government, but rather that of the whole society. So it is the capacity to manage nature of the whole society, including NGOs and the private sector, that needs to be built – not just that of government.

One area where country capacity needs to be enhanced is in the control of invasive species, as there are new species invading every year. Some of this is due to so-called nature parks importing non-native species, which often end up being released in the wild.

Re partnerships between government, NGOs and private sector, one of the participants explained there is a GEF project under consideration aiming to create a network of private reserves, in which many entrepreneurs are interested. Other participants agreed that this project could create opportunities for new partnerships and mentioned that private land owners are starting to show an interest in opening up their reserves to conservationists. An important element here is the building of trust between actors who have not worked together much before, e.g. the government and the private sector.

One participant noted that our presentation was somewhat hesitant in promoting the use of international expertise in Mauritius. The team confirmed that this was on purpose, as it felt there is a lot of capacity in the island and it had been given examples of where bringing in foreign expertise had yielded no or even negative results. But it also said that there are clear cases where foreign expertise can make a contribution – regional pooling of conservation and restoration expertise with Reunion was mentioned as a good example.

One participant said that more and more University students are interested in studying ecology and conservation biology, but that many of them were subsequently demotivated by not finding a job, or left for

other countries. The team agreed that this was a problem, but noted that in many cases people who receive formal training abroad subsequently leave their country, whereas capacity acquired through on-the-job training tends to stay in the country.

Meeting participants

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FUKUSHIMA Yosuke	UNDP	Yosuke.fukushima@undp.org	212 3726
GARI Elena	UNDP	Elena.gari@undp.org	753 7014
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SUBRATTY Djaheezah	MOE & NDU	dsubratty@mail.gov.mu	212 3363
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TEZOO Vishnu	Forestry Service	vtezoo@mail.gov.mu	675 4968

IUCN = The World Conservation Union

MOE = Ministry of the Environment

MSIRI = Mauritius Sugar Research Institute

MWF = Mauritius Wildlife Foundation

NPCS = National Parks & Conservation Service

UNDP = United Nations Development Programme

Report of a Series of Telephonic Interviews

Demand Articulation for Capacity Development in Ecosystem Restoration and Management for Small Island Developing States

Frits Hesselink
May 2006



Introduction

The project

IUCN is engaged in a portfolio of projects funded by the Italian Government (DGCS) to support Small Island Developing States (SIDS). One of the elements of the portfolio is a project to articulate the demand for capacity development in ecosystem management and restoration among key sectors in SIDS. The idea of this project is to generate a program outline of priority interventions for capacity development, based on a global survey of demand and supply and to generate first (web-based) tools for ecosystem management capacity development.

Capacity development

Capacity is the combination of human resources, institutions, and practices that enable a country to achieve its development goals. At the individual level Capacity Development refers to changing attitudes and behaviours, imparting knowledge and developing skills while maximising the benefits of participation, knowledge exchange, and ownership. At the institutional level, Capacity Development focuses on overall organisational performance and functioning capabilities, and the ability of an organisation to adapt to change. At the systemic level, Capacity Development emphasises the overall social and policy framework in which individuals and organisations operate and interact with the external environment, as well as the formal and informal relationships of institutions¹⁰.

Demand articulation and end users

Demand articulation goes beyond a needs assessment, as it not only identifies what needs to be done, but also what can be done best (leverage points for changes in behaviour, the organization and at the systemic level) and what key change agents and end users are willing and able to do. End users are those individuals who make use of the capacity development interventions, e.g. the captain or boats man of a new boat, the civil servant operating a new decision support system, or a worker in or outside a protected area, applying a new technique for coral reef restoration.

In a demand articulation survey, once the key entry points and institutions for change are identified, and capacity development needs at the three levels are formulated, the end users are analyzed. It is important to know their prior knowledge, their attitudes towards the changes and learning, their favourite way of updating their professional knowledge before deciding on the type of capacity development interventions. Finally a demand articulation identifies local supply mechanisms most suitable to the end users and additional supply mechanisms where necessary and appropriate. The more end users are owners of the capacity development program, the more effective the interventions are. Two way communication and end user participation in outlining and executing a capacity development program are therefore of great importance¹¹.

Telephonic interviews

In this project IUCN aims to articulate the demand for capacity development in ecosystem restoration and management in Small Island Developing States on a global basis. Before a global quantitative web based survey can be undertaken a qualitative survey is needed. This has been partly undertaken by a series of telephonic interviews, partly by a scoping mission to Mauritius where a range of actors (government, civil society, private sector and international organizations) were interviewed face to face¹².

The parallel series of telephonic interviews were held with 12 respondents from outside and 5 respondents from inside IUCN (See Annex 1). Although the number of interviews (for the interview outline see Annex 2) is a bit small, some first conclusions can be drawn, especially in combination with the information from the interviews on Mauritius. The outcome can form the basis for a more extensive global survey to be further refined by the inception workshop (22-23 June 2006). A first draft for such a survey based on the results of the telephonic interviews and the face to face interviews in Mauritius is attached in Annex 4. The interviews

¹⁰ For a more elaborate description of capacity development, see Annex 3.

¹¹ For a more elaborate description of demand articulation and end user participation, see Annex 3

¹² See Demand Articulation for Capacity Development in Ecosystem Restoration and Management for Small Island Developing States, Report of a Scoping Mission to Mauritius by Frits Hesselink, Eben Chonguica and Simon Rietbergen

also provide the project with some indications what the best next steps could be; see chapter 7. The challenge for the June workshop is to flash this out and formulate concrete suggestions for regional activities in this project.

I am most grateful for the openness and willingness to share information of all respondents involved. And I look forward to feedback and comments on this report, both in the IUCN June workshop and from respondents of the telephonic interviews to whom a copy of the report will be sent for comments and suggestions.

Frits Hesselink, HECT Consultancy
Utrecht, May 2006

1. Most urgent social-economic trends and issues on SIDS

Economic challenges seem to be related to difficult external market accessibility as well as small internal markets and often a direct dependence on a number of limited economic sectors. In addition there seems to be a serious problem related to brain drain and migration.

Often there is a huge divide between poor and rich. The poor destroy ecosystem for firewood, food etc. The rich impact the environment through the development of condominiums, holiday resorts and marinas. HIV and other health issues have a big impact. Finally it is important to realize that not all SIDS are the same; there are many regional and individual differences between islands.

"In the Caribbean the main issues are male violence and drop outs; unemployment. Negative impacts 'Western' development, e.g. wrong type of water treatment plants or the seawall in Dominica - driven by "more concrete means more money". In the Pacific the main issues are vulnerability against trends of global economy, e.g. cannot take their own economic decisions; external migration (often more than 50% of the GDP is remittances); internal migration, e.g. to capital Male of Maldives - 100.000 inhabitants on a very small area - 10-15 people in a small house - very narrow resource base for economic opportunities. Maldives GDP = 40% tourism, 20% fisheries, 20% agriculture, 20% various."

"Poverty - no scale to have an internal market (bananas, biomass, sugar cane, no subsidies or competitive advantage to have an external market, no education; difficulty in decision making because of conflicting interests (hotel building or habitat conservation. Migration - "Palau runs on Pilipino labour". HIV AIDS. The only thing they have is natural beauty: beaches, reefs, forest trails and island-life-culture."

"Poverty and food security. In the Caribbean 90% of the beverages and food are imported. There are opportunities for local value adding livelihoods, but they are not tapped into, because sectors do not talk to each other and do not solve issues jointly: e.g. ministry of tourism and ministry of agriculture could talk about setting up local or regional consortiums of producers to guarantee a qualitative and quantitative supply of food and beverages for the hotel industry."

Recommendations for the IUCN DGCS project

For the IUCN DGCS project it may be useful to make – through a web based demand articulation survey - an inventory of the most important socio-economic issues that are common to all SIDS, to regions or to special types of islands.

2. Ecosystems most under pressure as a consequence of these trends.

Ecosystem issues on SIDS are related to fresh water; waste management; construction of hotels, leisure facilities, roads, docks; reefs, watersheds, coastal vegetation (mangroves, shrubs, dune plants etc.). Mining, logging, extraction (e.g. freshwater poisoning for fish), pollution (dengue, malaria other mosquito related health threats), freshwater management. Coastal ecosystems are directly impacted by concrete constructions, untreated sewage, 'clumsy' tourists who cannot swim and walk on coral reefs, boats anchoring in reefs, land-clearing for crops, logging in forests, overuse of water for irrigation and dams in watersheds.

"Fresh water systems: in Maldives - a coral atos - we used to have underground sources and wells, because of the hotels, golf courses and sea rise overexploitation and salt water intrusion are the cause that now drinking water only comes from desalination and rainwater harvesting. Other ecosystems issues are logging (erosion & sediments wash in coastal waters causing pollution), road construction through mangroves or other systems. In Haiti all the forests have disappeared."

"Marine system: no understanding of their value, no protected areas, many cases of over-fishing, no awareness of the forest-reefs linkages. Watersheds and forest habitats - fresh water. Invasives, soil erosion."

"Climate change means for small islands salination, storms, sea level rise, for big islands weather extremes affecting agriculture. SIDS have very diverse economies and levels of development, with some depending on agriculture, forestry and fisheries and others relying primarily on sectors such as tourism for their food security. Instability in agricultural production and exports and increasing dependence on food imports by SIDS has led to vulnerabilities caused by events that are often outside their control."

Recommendations for the IUCN DGCS project

For the IUCN DGCS project it will be useful to make – through a web based demand articulation survey - an inventory of the most urgent ecosystem management and restoration issues on SIDS where capacity development can contribute to a positive change and make this information accessible for capacity development on SIDS dealing with ecosystem management and restoration issues.

The inception workshop may consider to focus the global web based survey not on the concept of ecosystem – as this is often interpreted by respondents in a conservation biology terminology as biomes or habitats – but on the concept of ecosystem services.

3. Key actors on SIDS that can realize a change in the negative impacts on ecosystems

Answers to this third question are very broad and this might be related to the existence of a multitude of reasons to be changed by institutions/actors, as well as to the particular situation of each small island developing state. In general what appears to be needed is a better coordination between governmental institutions as well as further capacity building for experts.

Respondents name a range of key actors on SIDS that can realize a change:

- Government, e.g. prime minister, various ministries, high officials and politicians
- Para-statal, e.g. electricity companies, water supply, sanitation, port etc.
- Regional authorities
- Local authorities, e.g. mayors, local politicians, municipalities, municipal services
- International organizations and projects with capacity development components
- Agricultural sector, farmers, farmer organizations, cooperatives
- Tourist sector, hotels, restaurants, tour operators, entertainment and leisure companies
- Fishing sector, fishermen, associations, market organizations
- Other private sector organizations, chamber of commerce, banks, industry
- Associations, women's organizations, trade unions, association of journalists, churches
- NGOs, local and international, active on SIDS
- Educational institutions, schools, universities, training and research institutions
- Traditional authorities and organizations

The following quotes illustrate the change that key actors on SIDS can realise:

Engaging high level leaders to get political support and put the problems on their radar. Planning and executing integrated resource management on SIDS - the interconnectedness of sectors is much more apparent than on the continent. There is an fatigue on SIDS of international planning and self assessment processes - what they need now is implementation the only learning they need is learning by doing and peer learning.

A big issue is corruption in a variety of institutions. Land tenure plays a role (in Pacific much community ownership (no incentive for economic development) in Caribbean much private ownership. The state is weak in SIDS - there is little or no capacity for research, management or enforcement.

Agriculture is a key area to focus on. If we turn agriculture more towards sustainable agriculture, we would solve many problems with regards to the need of food and fibres. We should start of setting the agenda of ministers, decision makers, the private sector and farmers on the issue and value of alternatives and the need to create new (external) markets. Tourism is another area - hotels should become guardians of the forests they are encroaching on and e.g. a system of royalties should pump back money into conservation, as is done by the monkey-export companies (for pharmaceutical purposes).

There is a need for SIDS to build capacity to monitor the seas (illegal fishing, fish stocks). Most of their Marine parks are paper parks - they have to learn about multi-species assessment, about the importance of the pre-cautionary approach. And about activities in fishing, agriculture and forestry that are sustainable alternatives. It is important that on SIDS sectors learn how to work together (e.g. tourism, agriculture, environment and foreign affairs).

Recommendations for the IUCN DGCS project

For the IUCN DGCS project it may be useful to make – through a web-based demand articulation survey - an inventory of the most important entry points for capacity development on ecosystem management and restoration on SIDS and make this information accessible to capacity development initiatives on SIDS dealing with ecosystem management and restoration issues.

The inception workshop may consider to focus the global web based survey not on the concept of actors or institutions, but on socio-economic changes that have a direct impact on ecosystem services.

4. Implications for capacity development at system, organization and individual level

The topics listed are wide and range from the integration of traditional knowledge to project management, project development or also to other topics related to ecosystem management and trade. In general what appears to be needed, is training that can provide practical results. This may be illustrated by the following quotes:

“Convince decision makers by giving examples of strategic environmental assessments and proactive planning, with calculation how many millions are avoided for clean-up costs etc. or by giving them satellite imagery of habitat degradation with valuation of costs of loss of ecosystem services; examples and checklists for participatory planning - how to involve local people, how to manage the project.”

“Protocols for harbour management, institutional change processes and techniques. Science content: species; Management content: captives species management, forest management; Administrative content: stakeholder management, partnership building, funding, lessons learnt.”

Integrated ecosystem management on SIDS. More access to research and experiences (good practice) on this topic. More knowledge about development administration (how to write a proposal for GEF, DGIS, DFID and how to administer such a project).

“We need more generalists, and especially we need more skills in adaptive management. There are no technological fixes and if there are, SIDS have no capacity to implement them. Managers in different sectors have to learn what the different options, they have to learn how to appreciate and quantify externalities and apply the conclusions in their management and learn by doing.”

From the interviews the following needs and demands at the various levels emerge:

Individual capacity

- Organizational management and human resource skills, e.g.
 - internal and external communication
 - project development and management
 - monitoring and evaluation
 - crisis management
 - conflict management
 - stakeholder management
 - human resource management
 - strategic and participatory planning
- Technical skills for ecosystem restoration and management, e.g.
 - coral reef restoration
 - waste management
 - tree planting
 - forest restoration
 - environmental impact assessment
- Specialized knowledge & qualifications for ecosystem restoration and management and sustainable development, e.g.
 - integrated land use planning
 - ecosystem approach and ecosystem services
 - cost effective combating methods for invasive species
 - new mechanisms to finance conservation
- Attitude change e.g.
 - understanding why environment is important
 - understanding the ecosystem approach
 - willingness to share information
 - open to work with civil society and the private sector

Organizational capacity

- Vision and mission that has room for ecosystem restoration and management and for sustainable development;
- Staffing, e.g. specialists in marine biology, veterinary etc.;
- Equipment, e.g. tissue culture, GIS, boats, vehicles;
- Funding, e.g. new mechanisms for financing conservation;
- Service delivery, e.g. creative solutions for conservation as a service to society.

Systemic capacity

- Knowledge of environmental policy content and ecosystem issues
 - internal and external communication
 - inter-sector communication
 - harmonization of policies, strategies and plans
- Enforcement and implementation
 - corruption issues
 - effective instruments
 - effective attitudes and behaviour
- Policies and legislation relevant to ecosystem management and restoration, e.g.
 - relationships between different policies
 - collaboration and linkages between institutions involved in environmental use and management;
 - issues of decentralization
 - relationships between health issues and the environment.
- Mainstreaming sustainable development

End users

End users can range from schoolchildren to ministers. A first glance at the various needs and demands at the three levels seems to indicate that the most important end users will be government officials at decision making and operational level and staffs of NGOs.

It is important to realize that many respondents indicate that there exist a 'tiredness' among many end users about international capacity development initiatives, which are perceived as top-down and involving a lot of work without immediate positive impact and concrete actions on real needs. This perception was confirmed during the Mauritius scoping visit.

Recommendations for the IUCN DGCS project

For the IUCN DGCS project it may be useful to make – through a web based demand articulation survey - an inventory of the most frequently demanded capacity development interventions at the different levels and for the most relevant groups of end users and to make this information accessible to projects on SIDS dealing with capacity development on ecosystem management and restoration issues.

The inception workshop may consider whether to focus the global survey on interventions at the three levels for top government decision makers, government executives, operational staff of governmental institutions and NGO executives and operational or field staff.

5. Most effective types of capacity development to meet the demand

There is a clear need for larger cooperation opportunities between SIDS. Peer exchange and knowledge sharing seem to represent an interest expressed by several persons interviewed. Training programs and the creation of networks that would help experts to share their experiences and learn from what others are doing has also been mentioned. The availability of a Champion or a high level forum as potential drivers has been suggested as a way forward.

“Peer exchange between islands in a region of wise practices. Resource managers in government had their training in Europe or the US, they manage fish according to their biology books, and they do not know how to manage the people. They should learn how to dialogue and work with local communities and change from experts who tell and enforce to facilitators of change. Schoolteachers know only how to teach Western style science education, they have to reorient themselves towards starting from the local knowledge and community culture.”

Rare should do the capacity development to local communities and work on eco-tourism. For the higher echelons a SIDS Davos is needed, maybe together with OTS and Harvard, Sorbonne or other institutions or companies of great prestige (Microsoft, Google, Yahoo, and cruise lines) - maybe have the Davos on an eco-tourism ship or cruise. Have renowned experts explore with key decision makers the trade offs for Sustainable Development.

“Hands on short training modules - we cannot miss our staff too long. Workshops with assignments and professional updating through e-learning, like we have on project management, with some kind of certification. Yellow pages, exchange of very practical examples, e.g. we know about how to deal with solid waste, EIA, but we do not know how to manage with coral reef fish. We need local knowledge and practical experiences on how to deal with agriculture on mountain tops and slopes and measures that prevent the soil raining down into the reefs.”

Recommendations for the IUCN DGCS project

For the IUCN DGCS project it may be useful to make – through a web based demand articulation survey - an inventory of most effective types of capacity development per ecosystem management or restoration issue and make this information accessible for projects on SIDS dealing with capacity development on ecosystem management and restoration issues.

6. Local supply mechanisms and need for additional supply

A variety of training examples are mentioned through multilateral donor agencies, local consultants, NGOs or also universities. An opportunity to learn from existing projects as well as connecting the players together is also another alternative mentioned to help build the capacity of experts.

“SPREP, Pacific Invasive Learning Network, University of the West Indies, University of the South Pacific, leading NGOs such as TNC and Rare, GEF Small Grants Program for the Caribbean.”

Strengthen communities with basic information, e.g. well informed local radio programs (switch off lights, conserve water, collect waste) - not too much multimedia. Strengthen awareness of communities through EE, ESD, schools, but do not use European model. Build on the local culture. Make use of training components of ongoing project of e.g. UNDP, UNESCO etc and of existing educational institutions.

“Have the teams working on different issues or entry points for integrated planning that are relevant to each island, e.g. invasives, freshwater, land use, fisheries, awareness etc. Do a survey more broadly for GIP and not only on ecosystems, ask questions such as (1) what are priorities for action for conservation; (2) how could a partnership help them to achieve this priority; (3) what programs are already in place to provide support for these issues; (4) what are the strengths and weaknesses of these programs.”

Recommendations for the IUCN DGCS project

For the IUCN DGCS project it may be useful to make – through a web based supply side survey - an inventory of all capacity development initiatives that relate to ecosystem management and restoration on SIDS and make this information accessible in a demand oriented way for experts on SIDS dealing with ecosystem management and restoration issues.

The IUCN DGCS also may explore to what extent global and regional networks of centres of expertise - using existing initiatives and institutions - maybe a useful mechanism.

7. Suggestions for next steps in the IUCN DCSC project

On the basis of the telephonic interviews a number of possible next steps for the IUCN DCSC project emerge. These next steps should be discussed and further refined during the IUCN DGCS project workshop in Gland, Switzerland, 21 - 23 June 2006.

1. Feedback on reports

It would be useful to put both demand articulation reports on the CEM website, and undertake a mailing to relevant experts with the request for feedback on the reports.

2. Web-based global demand survey

On the basis of the qualitative information from the reports and the feedback a quantitative global survey can be developed by the inception workshop¹³ on issues previously discussed such as

- most important socio-economic issues that are common to all SIDS, to regions or to special types of islands
- most urgent ecosystem management and restoration issues on SIDS where capacity development can contribute to a positive change
- most promising entry points for capacity development on ecosystem management and restoration
- most frequently demanded capacity development interventions at the different levels and for the most relevant groups of end users
- most effective types of capacity development per ecosystem management or restoration issue
- to what extent a global and regional networks of centres of expertise - using existing initiatives and institutions - maybe a useful mechanism.

3. Web-based global supply survey

On the basis of the demand articulation exercises a web-based global survey can be developed to make an inventory of existing capacity development initiatives relating to ecosystem management.

4. Regional validation and gap analysis

On the basis of the demand and supply surveys regional expert meetings can be held to validate the results from the global surveys, analyze gaps in supply in the region and make recommendations for demand oriented interventions that complement existing initiatives. The various other project components of the IUCN DGCS ecosystem management program should also play a role in the validation and gap analysis.

5. Web tool for awareness raising among high level decision makers

In dialogue with opinion leaders on ecosystem restoration and management on SIDS and experts from the IUCN regions a web based generic advocacy tool for high level decision makers could be developed on ecosystem linkages, e.g. forest-reef, flow-shrimps etc. The generic tool can be adapted for local use on the different SIDS. The demand articulation survey can be used as a first step to gather information and ideas. The exercise can also provide valuable learning for IUCN and DGCS how to use the web for a global capacity development initiative.

6. Final report with project proposal portfolio presented at Sardinia Meeting

In short report the experiences and learning from the IUCN DGCS project should be documented and on the basis of the regional validation and gap analysis a portfolio with project ideas should be included. The results and conclusions should be presented at a global expert meeting to be held in November 2006 in Sardinia.

¹³ A draft version to be further refined in the workshop is provided in Annex 4.

Annex 1

List of respondents of the telephonic interviews

External respondents

Elise Alart, TUI-Netherlands, The Hague, Netherlands

Fathima Ghina, UNESCO, Paris, France

Ameenah Gurib-Fakim, University of Mauritius, Réduit, Mauritius

Jock Henwood, Seychelles

Brett Jenks, RARE, Arlington, Va, USA

Douglas Nakashima, UNESCO, Paris, France

Audrey Newman, TNC, Hawaii, USA

Nadia El-Hage Scialabba, FAO, Rome, Italy

Soodhakur Ramlallah, Mauritius Union of Journalists, Port Louis, Mauritius

Dr Anwar Rumjaun, Mauritius Institute of Education, Réduit, Mauritius

Nirmal Shah, Nature Seychelles, Seychelles

Dirk Troost, UNESCO, Paris, France

IUCN respondents

Tareq AbuHawa, IUCN WESCANA, Amman, Jordan

Eben Eben Chonguiça, IUCN, Rosa, Maputo, Mozambique

Philippe Gerbaux, IUCN Oceania, Fiji

Tom Hammond, IUCN Canada, Montreal, Canada

Simon Rietbergen, IUCN HQ, Gland, Switzerland

Melita Samoily, IUCN EARO, Nairobi, Kenya

Annex 2

Format for interviews

Demand articulation capacity development in ecosystem management/restoration SIDS - Expert interviews - script

Introduction

IUCN is engaged in a project funded by the Italian Government (DGCS) to support SIDS. One of the elements of the project is to articulate the demand for capacity development in ecosystem management and restoration. The idea is to generate a program of priority interventions for capacity development, based on a global survey. You have been mentioned to us as a key expert to help us with our task.

Questions:

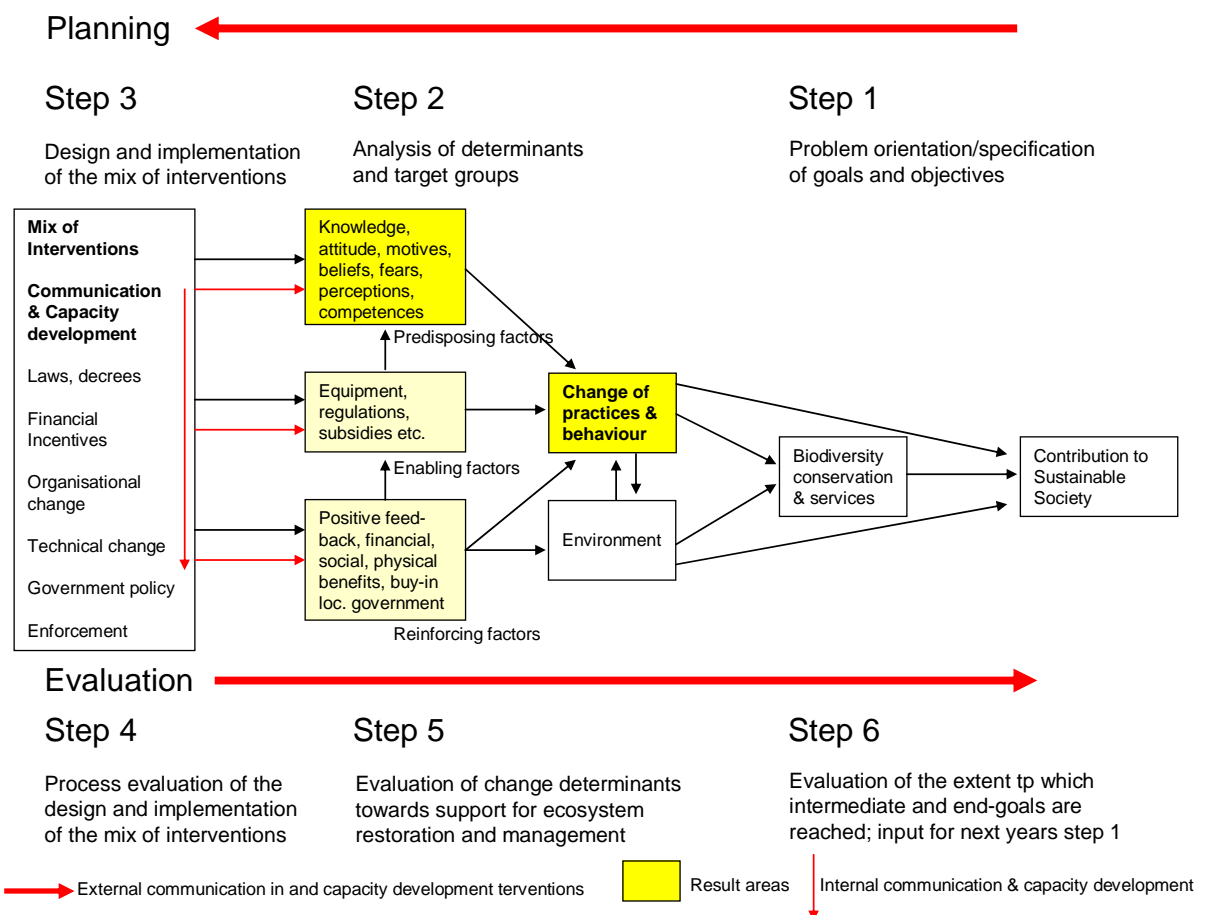
10. What are your professional background and the relation in your work to ecosystem management and restoration?
11. What are today the major and most urgent socio-economic issues/trends that Mauritius is facing?
12. How do these issue/trends impact on ecosystems on the island? And which ecosystems are most under pressure as a consequence of these trends.
13. What key institutions/actors should change their practices in order reverse these negative trends?
14. What are the implications for their capacity development – what type/categories/content areas of capacity have to be developed?
15. What would be the profile of the main end-user groups for these capacity development interventions?
16. What types of capacity development delivery will be most effective for these groups of end users?
17. What local (and other) supply mechanism for capacity development can match this demand and what additional supply is necessary?
18. Final last good advice.

Annex 3 Capacity development and Demand Articulation

Capacity development

Capacity development is managing change. It takes place at the individual level (new knowledge, new attitudes, new skills, and new professional behaviour), the institutional level (new priorities, new procedures, new job descriptions, new practices) and the systemic level (new agendas, new rules of engagement, new partnerships, new ways of interaction, and new attitudes towards exchange, cooperation and participation). Over the last decades a range of capacity development opportunities have emerged, that go far beyond the classical teaching and training methods of graduate and postgraduate courses and training workshops.

Two way communications has become an important part of the capacity development paradigm. Capacity development is more and more seen as an ongoing activity for each organization to better prepare itself for the challenges of tomorrow. Modern management invests regularly in capacity development as part of the concept of the learning organization. In the governmental management or policy cycle on ecosystem management and restoration, one can position capacity development and communication - its natural companion - as follows¹⁴:



The classical idea of capacity development – in the environment field - focuses mainly on the enabling factors, complemented by training, re-training, workshops, research, manuals and guidelines. The predisposing and reinforcing factors are not really included in this approach. Often international training workshops end up with the wrong audiences, or with participants who cannot apply the newly acquired

¹⁴ Borrowed from University of Klagenfurt MSC Course Management of Protected Areas, Module 22, page 7, prepared by HECT Consultancy. For HECT Consultancy, see: www.hect.nl.

knowledge at home; either because it is not practical enough or because the organizational structure, priorities or procedures do not allow for it. And many people trained abroad do not return to their job.

Demand articulation and end-user participation

Management for change is successful when the interventions are not only based on what technically needs to be done (needs assessment), but also based on what can be done and what people are willing and able to do (demand articulation). In the end capacity development and a learning organization are about people and building human and social capital. To internalize capacity development in an organization and in its staff, it is necessary to articulate the demand side. Adults learn best when they are in control of their learning. Demand articulation therefore also identifies how end user participation in the capacity development can be organized most effectively. That makes two way communications a key element in capacity development.

The modern approach of the learning organization and learning society varies from on the job professional updating to communities of practice, inter-disciplinary learning, exchange networks and distance learning. Interventions are no longer supply driven, but demand driven. They are more 'facilitating than teaching' and rather offer opportunities to develop individually or institutionally than prescribe technical or social solutions. It offers an investment in the future of individuals, organizations, and societies. The following graph¹⁵ shows the changes capacity development today is undergoing.

From	To
Exclusive orientation on graduate and post graduate formal education	Orientation to include on the job professional updating
No linkage with latest developments	Link with latest developments and cutting-edge new practice
Use only classical teaching methods	Including new learning techniques such as learning by doing
Orientation on technical, legal and financial aspects and infrastructure	Orientation also on a variety of know-how, attitudes, skill-sets and feedback mechanisms
Stand alone initiatives	Approaches integrated in new and existing networks, link with other sectors, business and civil society
English language	Local language
Supply oriented	Demand oriented

Centres of expertise can play an important role in bringing together - on a regional basis - demand and supply. Face to face exchange is complemented by various methods of on-line exchange and on the job professional updating. Learning management monitors and evaluates with the end users the process and the linkages between the different levels (individual, etc.).

¹⁵ Borrowed from the 1995 IUCN concept paper New Learning for Sustainable Solutions by Ger Bergkamp, Frits Hesselink and Keith Wheeler.

Annex 4

Draft outline for a web based global demand articulation survey

After each closed question follows a open question (e.g. what other issues are most urgent etc.)

1. Most urgent socio-economic issues

The most urgent socio-economic issues on SIDS are:

Difficult external market accessibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dependence on limited economic sectors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brain drain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poverty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corruption	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Limited natural resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Limited human resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Ecosystem services most under pressure

Ecosystem services most under pressure on SIDS are:

Cutting of mangroves and other coastal defenses against storms						
Intensive agriculture, industrial and urban pollution threatening fresh drinking water						
Over use of water resources threatening water supply and flow						
Forests and other growth preventing erosion						
Pollution of lagoons threatening fisheries and tourism						
Uncontrolled fisheries in coastal and EE zone						
Invasive species threatening indigenous fruit trees and other crops						
Unplanned urbanization threatening biodiversity						
Unplanned and uncontrolled tourist activities threatening marine or terrestrial biodiversity						

3. Socio-economic changes that have a direct impact on ecosystem services

Actors/institutions that can change negative impact on ecosystems on SIDS are:

Changes in land use						
Development of large infrastructure projects						
Development of tourism and real estate projects						
Development of plans for Extended Economic Zone						
Development of mining activities						
Development of logging activities						
Uncontrolled import of foreign invasive species						
Development of new industrial activities						

4. Implications for capacity development at the individual level

Organizational management skills needed most urgently by executive staffs of governmental institutions on SIDS are:

Internal and external communication						
Project development and management						
Monitoring and evaluation						
Crisis management						
Conflict management						
Stakeholder management						
Human resource management						
Strategic, integrated and participatory planning						

Most urgent technical skills for ecosystem management and restoration needed by (field) staff of governmental institutions on SIDS are:

Coral reef restoration	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Waste management	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Tree planting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Forest restoration	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Environmental impact assessment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Specialized knowledge & qualifications for ecosystem management and restoration needed by executive staff of governmental institutions on SIDS need most urgently investment in:

Integrated land use planning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Ecosystem approach and ecosystem services	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cost effective combating methods for invasive species	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
New mechanisms to finance conservation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Attitude change towards ecosystem management and restoration needed by executive staff of governmental institutions on SIDS are:

Better understanding why environment is important	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Better understanding the ecosystem approach	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
More willingness to share information	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
More openness to work with the private sector	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
More openness to work with civil society	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

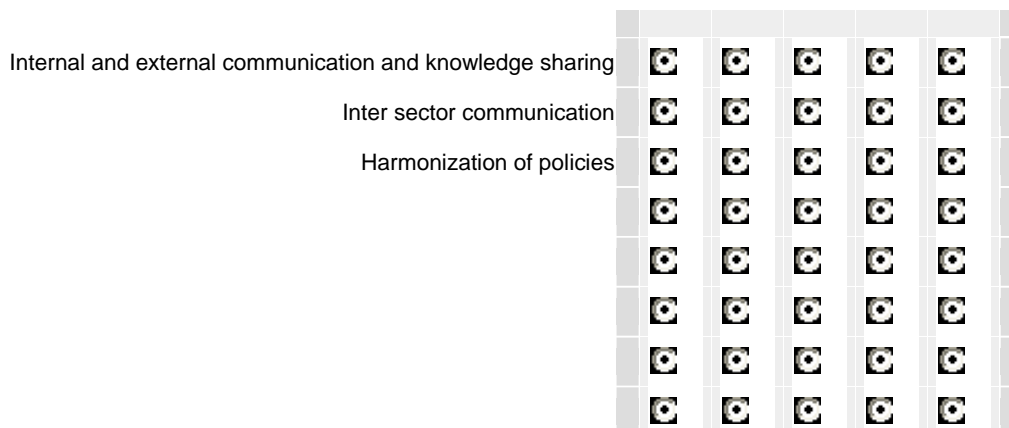
5. Implications for capacity development at the organizational level

Organizational capacity needed by governmental institutions on SIDS are:

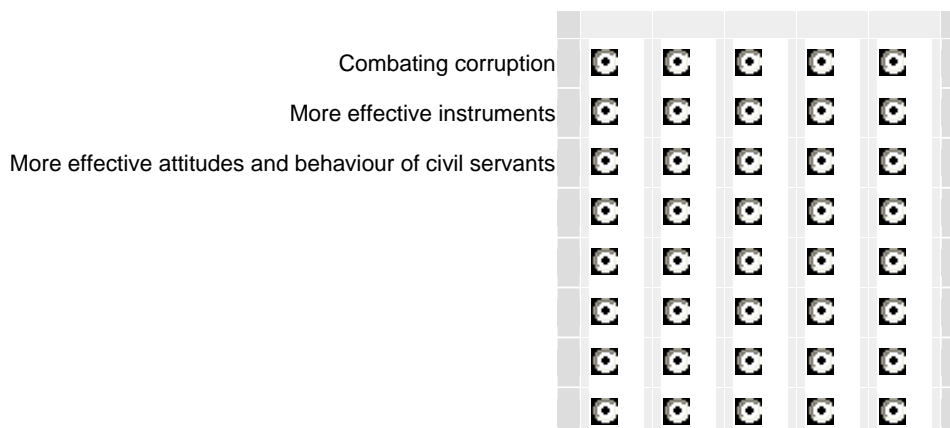
Vision and mission that have room for ecosystem restoration and management	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Staffing with experts in	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Equipment, e.g.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Funding, e.g.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Service delivery, e.g. creative solutions for conservation as a service to society	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

6. Implications for capacity development at the systemic level

Knowledge of environmental policy content and ecosystem linkages by governmental institutions on SIDS need investment in:



Enforcement and implementation of environmental policy by governmental institutions on SIDS need most urgently investment in:



Policies and legislation relevant to ecosystem restoration and management by governmental institutions on SIDS need most urgently investment in:

Improved relationships between different policies	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Improved collaboration and linkages between institutions involved in environmental use and management	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Improved attention to issues of decentralization	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Improved relationships between health issues and the environment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Mainstreaming sustainable development as a framework for ecosystem restoration and management by governmental institutions on SIDS needs most urgently investment in:

Awareness of top decision makers of ecosystem linkages	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Policy perception of the island as one ecosystem	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

7. Most effective types of capacity development delivery mechanisms

For operational staffs of governmental institutions in the field the most effective types of capacity development delivery mechanisms are:

Learning by doing					
Practical short on the job training courses					
Internships of foreign graduate students					

For executive staffs of governmental institutions the most effective types of capacity development delivery mechanisms are:

Learning by doing					
Practical short on the job training courses					
Peer exchange					
Exchange visits to other SIDS					
Training workshops					
Web based professional updating modules					
Internships of foreign PhD students					
Knowledge networking through regional centres of expertise					

8. Most effective local supply mechanisms

Most effective local supply mechanisms are:

Local universities	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Existing international projects with a capacity development component	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Local consultants	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

9. Most effective foreign supply mechanisms

Most effective foreign supply mechanisms are:

universities	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Existing international projects with a capacity development component	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
foreign consultants	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

10. Criteria for effective foreign supply mechanisms

Criteria for effective foreign supply mechanisms are:

Language						
Cultural adaptability						
Involvement local experts						