

The North Rupununi Impact Assessment 2008

Darwin Initiative Guyana Partnership

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The Open University
Iwokrama International Centre for Rain Forest
Conservation and Development
Environmental Protection Agency
North Rupununi District Development Board
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Executive summary

This report investigates the impact of the North Rupununi Adaptive Management Process. This process has been developed since 2003 principally as a result of funding from the UK Darwin Initiative (DEFRA, UK Government). This funding stream has now come to its conclusion and therefore it is a good time to assess progress in implementing the process. The 'system viability approach' has been used to underpin this investigation, since it is able to identify key factors which will sustain and/or threaten the process in the future. This approach also explicitly considers the wider context within which the process has been implemented. The resulting analyses identify significant constraints limiting the viability of the process, although many of these are determined by the external conditions within which it operates. In the face of limited prospects of international donor funding to continue the process in the short-term, simple practical recommendations are proposed to guarantee the viability of the process.

1. Introduction and goal

1.1 What is the NRAMP?

The aim of the North Rupununi Adaptive Management Process (NRAMP) is to facilitate effective and appropriate natural resource management to promote and sustain human and ecological health in the face of increasing social and environmental change. This process was developed over eight years by a project team working in the North Rupununi Wetlands, Guyana, funded from 2003 to 2008 by the Darwin Initiative, UK government. At present, it is in the form of a document (freely available at www.nrwetlands.org.gy), and has been adopted and implemented in several communities within the North Rupununi for managing local livelihood initiatives. It is also a core source for natural resource management training courses at community, ranger/environmental officer and postgraduate levels within Guyana, which to date, have been implemented in a range of communities, government agencies and NGOs.

1.2 Key aspects of the NRAMP

Natural resource management is a highly complex activity which needs to consider issues of human capacity, the interdisciplinary and dynamic nature of natural resource management and the wider socio-political and ethical environment within which it operates. As such, the NRAMP is not a plan; it is a process. There are no set rules, regulations or quotas on natural resource management. The NRAMP provides guidelines on how to find solutions to natural resource management problems by using an adaptive, participative, holistic, evidence-based and practical approach. The learning cycle, namely goal-setting, observation, evaluation, planning and acting (and iterations of this cycle), frames the adaptive nature of the NRAMP. It recognises the limited human capacity within Guyana for natural resource management as well as the need to involve all parties or stakeholders in the decision-making process. So rather than institutionally-led, the NRAMP advocates a 'champion-led' approach where individuals are supporters, campaigners and facilitators of the NRAMP.

1.3 The need for an impact assessment

The efficacy and sustainability of projects that integrate conservation and development, such as the NRAMP, have been questioned (see for example, McShane and Wells, 2004; Garnett *et al.*, 2007). Although outputs stated on project proposals may have been produced, there have been concerns that success in these projects tends to be short-lived and fragile, with little lasting improvements in the well-being of the communities and environment in which they took place. It is therefore vital to go beyond the project proposal indicators of success, and assess the impact of the NRAMP within the evolving capacity of the North Rupununi and Guyana. Findings will inform future resource and capacity requirements of implementation of the NRAMP and provide lessons for biodiversity conservation and development initiatives across Guyana.

1.4 The approach for the impact assessment

As with all assessments, there will inevitably be an element of subjective judgement within the process. In order to minimise the subjective bias of individuals, it is useful to make the purpose and scope of the assessment as explicit as possible. The following issues have been highlighted in order to focus our attention:

-- knowledge about and perception of the project and the circumstances within which it is situated. Our individual cognitive limitations mean that we all have to simplify the actual complexities of the situation into a practical model. The development of the simplified model will also be greatly influenced by individual experiences and values. The process must therefore be explicit in surfacing our personal simplified understanding of the project and the wider context within which it operates, and our personal values which have controlled our understanding;

-- scenarios of future developments. We have to be realistic with regards to which developments we wish to implement, and which are possible and likely within the current financial and human resource climate;

-- time horizon. How far should we look back on project achievements and look ahead on projects challenges? A clear identification of the timeframe of assessment is therefore necessary;

-- detail and scope. How broad should our assessment be and into how much detail should our investigations go? We should be honest about our capacities both in terms of time availability, access to information, and knowledge of the situation, while at the same time taking into consideration the purpose, time availability and knowledge of those who will be reading the report.

The learning cycle approach was used to monitor and evaluate the impact of the NRAMP. The goal of the NRAMP (outlined above) had already been set through a participatory process within the NRAMP project team (comprised of representatives from various stakeholders). The observation phase involved collecting a range of indicators which informed our relative success in achieving NRAMP objectives and monitoring the 'health' of the NRAMP as a human activity system, and its wider environment, including Guyana's educational provision, quality of governance, and overall socio-economic status of its population. An adapted version of the system viability approach (Bossel, 1998, 2001) was used to develop the indicators as it is one of the most holistic and rationalised frameworks for assessing system viability and performance (Reed *et al.*, 2006).

The use of indicators of project performance and success has become very popular recently, including the use of indicator categories such as the "4 Es": efficiency; effectiveness; efficacy; and ethics. However, the resulting extensive lists of indicators derived from these categories could be criticised for not being part of an integrated framework which could demonstrate how these indicators are in turn affected by the conditions within which the project is situated. Also, many of these indicators reflect the particular expertise of their authors, often going into too much detail in some areas and not enough detail in others. The system viability approach is instead a comprehensive and integrated framework which will allow users to investigate the viability and health of any system under investigation, be it an integrated conservation and development project, an ecosystem, or a community. Indeed, the system viability approach underlines NRAMP's ecological and community-based monitoring.

Bossel (1999) clarifies the meaning of system viability:

"viable is defined as "able... to live and develop; able to take root and grow." When we talk about a viable system, we mean that this system is able to survive, be healthy and develop in its particular system environment. In other words, system viability has something to do with both the system and its properties, and with this system environment and its properties."

In this case, the NRAMP can be considered a 'human activity system' i.e. a group of individuals acting in concert to achieve the NRAMP goal. The fundamental indicator categories for system viability are as follows:

- 1) *Existence* – Does the NRAMP have the basic requirements to exist?
- 2) *Resistance* – Can the NRAMP stay the same with changing conditions?
- 3) *Flexibility* – Can the NRAMP accommodate changing conditions using existing processes and methods?
- 4) *Adaptability* – Can the NRAMP adjust to changing conditions using new processes and methods?
- 5) *Ideal performance* – Can the NRAMP improve its efficiency and effectiveness?

But as stated above, the NRAMP human activity system cannot operate in isolation from its environment, so a corresponding set of indicators is also required to inform on the factors which are indirectly influencing the performance of NRAMP. Many projects struggle not because of internal problems, but because the conditions within which they operate present insurmountable challenges. An awareness of these challenges may also allow the project to evolve better ways of coping.

Bossel (1999) recommends that if any of these categories are threatened, then the overall viability of a system is in danger. We would like to propose that a slightly different approach to assessing system viability is taken, which may in fact make more intuitive sense, and provide greater guidance for intervention. We would recommend that the viability of a system should be determined by following the above categories in the order within which they are listed. In other words, “existence” should be considered by far the most important category, and “ideal performance” should be considered as the least important. For example, if the project is threatened, then the “existence” indicators should be prioritised first. Once these are secured, then the ability to resist the threat should be promoted. If further capacity is available, then options for flexibility, and eventually, adaptability, should be considered. Ultimately, one should seek to maximise the project’s ideal performance. Of course, all of these categories have the potential to act in synergy, so promoting ideal performance many in fact support long-term existence.

As with any human activity system, it is envisaged that the project will evolve over time. Another away of using these categories to influence project decision-making is to prioritise each according to four distinct stages within the cyclical nature of system evolution: growth (flexibility and ideal performance); conservation (resistance); deterioration and creative destruction (existence); renewal and reorganisation (adaptability). Cycling through these stages is inevitable as the project will go through boom and bust cycles of support (both externally from international donors and internally from, for example, support from local communities) and changing environmental conditions (e.g. cycles of economic growth and recession in Guyana). This slightly more sophisticated guidance in fact reflects our recommendations above, which prioritises existence when the project is threatened, and adaptability when new opportunities/resources are made available.

Tables A to E in the Appendix outline all the indicators for the assessment. These are divided into direct and indirect indicators. The latter refer to the ‘environment’ in which the NRAMP is working. The indicators are both qualitative and/or quantitative, objective and/or subjective. For the subjective data, the best approach is to consult as many people as possible in order to produce reliable results.

Data is both primary, through records and information from the NRAMP project, and secondary, from government, NGO and international agency reports. This was collated by the report authors from personal experience and knowledge, on-line searches and communication with Guyanese colleagues. However, the task was complicated by the lack of recorded information and the lack of disclosure of what should have been publicly available information. As a result, in some cases, some conclusions may be supposition rather than based on concrete evidence, whereas in other cases, highly suitable indicators have had to be removed as a result of lack of information.

Evaluation was also subjective, with three categories (1-inadequate; 2-acceptable; 3-good) and thresholds between these, developed in consultation between the NRAMP team.

2. Observation and evaluation

2.1 Existence – Does the NRAMP have the basic requirements to exist?

2.1.1 Human resources

Rationale for human resources as indicator for NRAMP existence

Human resources are key to the existence of the NRAMP. This includes both people trained as NRAMP facilitators, and the pool of potential people within Guyana with the appropriate skills to become NRAMP facilitators. An adequate critical mass of NRAMP facilitators of between 5 and 10 is deemed necessary to guarantee future training activities. Below 5 facilitators there is a risk that emigration, illness and other constraints would limit the provision of timely training courses. An adequate critical mass of NRAMP trainees of between 50 and 100 is deemed necessary to support the implementation of the NRAMP. Without adequate education at various levels, it would be difficult to find and train future facilitators and for these facilitators to build capacity within communities and institutions.

Monitoring outcome for human resources as indicator for NRAMP existence

NRAMP indicator - Completion records from NRAMP training courses up to April 2008 indicate that the critical mass of trained NRAMP facilitators is 57. The Community Course was implemented in five communities and 42 people completed the training. The Ranger/Environmental Officer Course was implemented in three key organisations (the NRDDDB, Iwokrama and EPA) and 15 people completed the training. Currently there are seven Guyanese NRAMP training course facilitators (Table 2.1).

Environment indicator

Guyana had a population of 751,223 in the last 2002 census^a, over 60% of which live in rural areas. This population is projected to decrease to 703,000 by the year 2025^a. This forecast is in line with the continued high emigration of the population, causing a literal 'brain-drain' within the country of qualified and trained individuals.

Obtaining secondary school and university degree results for Guyana has been difficult. However, a broader picture on education can help us understand the human capacity situation in the country. Public expenditure on education rose from 2.2 to 8.5 as a % of GDP from 1991 to 2002-2005^b, and although enrolment at primary school level was 100% in 2003, the drop-out rate increased from 2 (1996) to 4% (2002), and was 5-6% in Region 9 (includes North Rupununi)^c. Access to secondary school education in Guyana increased from 55% in 1991 to 65% in 2002, but no data is available on drop-out rates at this level. In 1999-2000, there were 45 primary schools in Region 9, with 3650 children in 45 schools, and only 3 secondary schools with 461 students^d. See Section 2.4.1 for information on teacher training.

At tertiary level, in 1999-2000 there were 6 technical/vocational colleges with 4662 students, 1 teacher training college with 1604 students and 1 university, the University of Guyana, with 7496 students^d.

The National Development Strategy for Guyana (2002) highlights the literacy problem in Guyana. It is estimated that there is a 21% rate of absolute literacy in Guyana, and an overall functional literacy rate that is just over 50%^e. As a result of this constraint many students graduate with low levels of literacy and have little or no opportunity of developing into functionally literate citizens^f.

Table 2.1 Guyanese NRAMP facilitators

| Name of NRAMP facilitator | Experience and skills |
|---------------------------|--|
| Ms Indranee Roopsind | Completed first degree. Worked for Guyana Zoo, Iwokrama and NRAMP project. Skills in biophysical monitoring, social monitoring, community engagement, participatory techniques, proposal writing and leading training workshops. |
| Mr Lakeram Haynes | Completed primary school. Worked for Iwokrama and NRAMP project, and as Community Environmental Officer. Skills in biophysical monitoring, social monitoring, community engagement, participatory techniques, Makushi language, facilitating training workshops and Participatory Video. |
| Ms Odacy Davis | Completed first degree. Worked for Guyana Zoo, Red Cross, Iwokrama and NRAMP project, and as secondary school teacher. Skills in stakeholder engagement, leading training workshops, legislation relevant to natural resource management and report writing. |
| Ms Vanda Allicock | Completed secondary school. Worked for the NRAMP project. Skills in biophysical monitoring, social monitoring, community engagement and facilitating training workshops. |
| Mr Orville Davis | Completed secondary school. Worked for the NRAMP project. Skills in biophysical monitoring, social monitoring, community engagement and facilitating training workshops. |
| Mr Sean Mendonca | Completed first degree. Worked for Guyana Zoo and NRAMP project, and is Scout Leader. Skills in biophysical monitoring, community engagement, engagement with youth and children and facilitating training workshops. |
| Mr Calvin Bernard | Completed Masters course. Worked for University of Guyana and NRAMP project, and as environmental consultant. Skills in teaching, biophysical monitoring and stakeholder engagement. |

Table 2.2 shows that there are a limited number of facilitators within Guyana that have the skills and experience to support training activities within the area of natural resource management and sustainable livelihoods.

Table 2.2 List of Guyanese facilitators who can support training in the area of natural resource management and sustainable livelihoods

| Name | Current affiliation | Official training and/or experience |
|------------------------|-------------------------------------|---|
| Indranee Roopsind | BHI | Iwokrama, NRAMP |
| Orville Davis | Toka Village | NRAMP |
| Lakeram Haynes | Rewa Village | Iwokrama, NRAMP |
| Vanda Allicock | Surama Village | NRAMP |
| Sean Mendonca | UG | NRAMP |
| Bertie Xavier | BHI | Iwokrama |
| Vanda Radzik | Independent consultant and activist | Iwokrama, CIDA and various national and international organisations |
| Hemchandranauth Sambhu | Iwokrama | Iwokrama, NRAMP |
| Aeisha Williams | WWF-Guianas | Iwokrama, NRAMP |
| Damian Fernandes | EPA | Iwokrama |
| Simone Mangal | Independent consultant | Iwokrama, various national and international organisations |
| Sharon Ousman | Iwokrama | Iwokrama, various national and international organisations |
| Odacy Davis | Conservation International | Iwokrama, NRAMP |
| Renwick English | EPA | Range of EPA training courses |
| Clydecia McClure | EPA | Range of EPA training courses |
| Sydney Allicock | Surama Village | Iwokrama |
| Samantha James | Iwokrama | Iwokrama |

Evaluation outcome for human resources as indicator for NRAMP existence

Evaluation indicator scores

Critical mass of NRAMP trainees = 2 (50-100 individuals)

Critical mass of Guyanese NRAMP facilitators = 2 (5-10 individuals)

Number of knowledgeable and skilled individuals potentially available = 1 (low capacity)

Number of people with facilitating skills in the area of natural resource management/sustainable livelihoods within Guyana = 1 (less than 50)

Evaluation summary

Within the context of Guyana where the capacity of individuals required to support NRAMP has been judged to be low (principally because of the high rates of emigration of skilled individuals, the low levels of literacy and school student retention, the relatively low proportion of GDP spent on education and the limited number of students going to technical/vocational colleges and the University), the achievements of the NRAMP project have been adequate (score of 2 for both critical mass of trainees and Guyanese NRAMP facilitators).

2.1.2 Representation

Rationale for representation as indicator for NRAMP existence

It is vital that the NRAMP has a number of ‘champions’ who can lead, support and/or facilitate the implementation of the NRAMP. Attendance at external meetings of facilitators and stakeholders is important for developing stronger ties and links between NRAMP facilitators and wider stakeholders, as well as between stakeholders themselves. Good levels of representation would be indicated by more than 80% of facilitators/stakeholders attending meetings, guaranteeing a wide range of perspectives to be included in decision-making, while at the same time maximising the potential for developing and implementing the NRAMP. Below 50% participation would automatically imply that a minority of facilitators/stakeholders would be involved in decision-making. More than 80% representation of NRAMP champions within Guyanese integrated conservation and development NGOs and governmental agencies would support the adoption and dissemination of the NRAMP approach, and in turn feed back to the NRAMP community relevant strategic and policy decisions. However, a critical mass of organisations and government agencies supporting integrated conservation and development needs to be in place in Guyana, with appropriate capacities for the challenges they face.

Monitoring outcome for representation as indicator for NRAMP existence

NRAMP indicator – Table 2.3 shows the range of NRAMP ‘champions’ within Guyana who could potentially help promote, sustain, integrate and further develop the NRAMP. These represent just under 40% of the organisations working in integrated conservation and development (as listed in Table 2.6). Tables 2.4 and 2.5 demonstrate the level of attendance by community members and wider stakeholders in NRAMP external meetings to date. The latter should be compared to key stakeholders involved in conservation and development in the North Rupununi: at regional level (NRDDB, representation from all sixteen North Rupununi communities, Bina Hill Institute, Iwokrama); and at national level (NRDDB, Iwokrama, Conservation International-Guyana, EPA, Bina Hill Institute, WWF-Guianas, University of Guyana, Ministry of Amerindian Affairs, Guyana Geology and Mines Commission, Guyana Forestry Commission, Amerindian Peoples Association, Guyana Organisation for Indigenous People, Ministry of Agriculture, Wildlife Division and UNDP). On average, there is 76% and 58% representation at stakeholder fora at regional and national level respectively.

Table 2.3 NRAMP Champions in Guyana

| Name of Champion | Organization | Type of support being given to NRAMP |
|-------------------------|--|---|
| Mr William Andries | NRDDDB (Chairman), local communities | Integration of NRAMP principles and process into NRDDDB and community policies and procedures e.g. PRMU |
| Mr Sydney Allicock | Community activist from Surama Village, Iwokrama Board Member | Contribute to integration of NRAMP principles and process into existing policies. Use of NRAMP materials for the development of community tourism-based livelihoods. |
| Mr Vincent Henry | Bina Hill Institute (Director) | Support implementation of Community and Ranger/ Environmental Officer Courses at the Bina Hill Institute. |
| Ms Indranee Roopsind | Bina Hill Institute (former NRAMP project member) | Integration of NRAMP into community livelihood activities. Implementation of NRAMP and Community Course in North Rupununi. |
| Mr Lakeram Haynes | Local communities (former NRAMP project member) | Contribute to integration of NRAMP principles and process into community level activities. Implementation of NRAMP and Ranger/Environmental Officer Course at community level |
| Mr Orville Davis | Local communities (former NRAMP project member) | Contribute to integration of NRAMP principles and process into community level activities. |
| Dr Indarjit Ramdass | Director, EPA | Support implementation of Ranger/Environmental Officer Course within EPA. |
| Ms Odacy Davis | Consultant (former NRAMP project member) | Implementation of NRAMP and Ranger/Environmental Officer Course at national level |
| Renwick English | Environmental Officer, Environmental Training Department, EPA | Implementation of Ranger/Environmental Officer Course within EPA in the future. |
| Clydecia McClure | Environmental Officer, Natural Resource Management Department, EPA | Implementation of Ranger/Environmental Officer Course within EPA in the future |
| Vanda Radzik | Development activist, Consultant to Iwokrama and NRDDDB | Lobbying of communities and government to support the NRAMP. Initiate the process of the North Rupununi being declared a recognised wetland ecosystem through signing unto the Ramsar Convention. |
| Dr Raquel Thomas | Director, Iwokrama International Centre | Support for the implementation of Ranger/Environmental Officer Course within Iwokrama in the future. |

| | | |
|-----------------------|---|---|
| Ms Melina Kalamandeen | Training Coordinator - Iwokrama International Centre | Implementation of Ranger/Environmental Officer Course within Iwokrama in the future. |
| Dr David Singh | Director General, Conservation International - Guyana | Integration of NRAMP principles and process into existing policies. Use of NRAMP information on the North Rupununi Wetlands in the process of Guyana establishing a Protected Area System. Possible integration of NRAMP course into CI's training Structure. |
| Mr Johann Earle | Guyanese Journalist | Has given significant coverage within the written media for the promotion of the NRAMP via project events and activities. |
| Mr Phillip Da Silva | Dean, University of Guyana | Contributed to coordination and delivery of project outputs. Committed to the preservation of NRAMP efforts through the Biodiversity Centre at the University of Guyana. Continue development and implementation of Wetlands Postgraduate Course. |
| Mr Calvin Bernard | Lecturer, University of Guyana | Contributed to coordination and delivery of project outputs. Committed to the preservation of NRAMP efforts through the Biodiversity Centre at the University of Guyana. Continue development and implementation of Wetlands Postgraduate Course. |
| Mr Sean Mendonca | University of Guyana (former NRAMP project member) | Support to teachers for the implementation of the Primary School material across Guyana |

Table 2.4 Attendance at NRAMP stakeholder fora at national level

| Date | Number of external attendees | Organisations / communities represented | Outputs from forum |
|-----------------------------|-------------------------------------|--|--|
| 23 rd Jan. 2007 | 12 | NRDDB, Iwokrama, Ministry of Amerindian Affairs, Conservation International - Guyana, Guyana Forestry Commission, WWF – Guyana, EPA, University of Guyana | 1) Official statement supported by stakeholders at forum on North Rupununi Wetlands status and management. 2) Press release |
| 14 th Sept. 2007 | 13 | NRDDB, Iwokrama, Wildlife Division, Conservation International - Guyana, WWF – Guyana, EPA, University of Guyana, Guyana Organisation for Indigenous People (GOIP), Guyana Geology and Mines Commission (GGMC), Bina Hill Institute | 1) Modified action plans for achieving visions 2) Press release 3) Wetlands Bulletin |
| 26 th Mar. 2008 | 88 | Iwokrama, Conservation International - Guyana, University of Guyana, EPA, GFA Consultants, Guyana Organisation for Indigenous People, British High Commission, Ministry of Agriculture, Guyana Geology and Mines Commission (GGMC), GT&T, NRDDB, Bina Hill Institute, UNDP, a range of Guyanese activists and conservationists, individuals of the general public. | 1) Greater awareness within Guyanese society about NRAMP 2) Press release |

Table 2.5 Attendance at NRAMP stakeholder fora at regional level

| Date | Number of external attendees | Organisations / communities represented | Outputs from forum |
|------------------------------|-------------------------------------|--|--|
| 5-6 th Sept. 2007 | 33 | Villages of Apoteri, Annai Central, Surama, Yakarinta, Yupukari, Kwatamang, Rewa, Katoka, Kwaimatta, Toka, Massara, Rupertee and Wowetta. Members of NRDDB | 1) Visions for the future of the North Rupununi 2) Action plans for achieving visions |
| 31 st Mar. 2008 | 41 | Toushaos and councillors from the sixteen villages of the North Rupununi, NRDDB, Bina Hill Institute, individuals from local businesses, local activists. | 1) Greater awareness within North Rupununi society about NRAMP |

Environment indicator

Table 2.6 lists the main organisations working on various aspects of integrated conservation and development within Guyana (note that there are also some environmental school-based/community-based clubs on the coast). However, data regarding the number of employees, total funding per year and total capital assets was not forthcoming from these organisations. Nevertheless observational and anecdotal evidence suggests that there are limited staff in these organisations, particularly at the ground/field/community engagement level, that many of these organisations are heavily reliant on external funding to function and that these organisations have limited capital assets, such as vehicles and technical equipment, which would greatly aid their work.

Table 2.6 List of organisations working on integrated conservation and development within Guyana

| Organisation/Project |
|--|
| Guyana Citizens' Initiative (GCI) |
| Environmental Community Health Organisation (ECHO) |
| North Rupununi District Development Board (NRDDB) |
| Bina Hill Institute (BHI) |
| Iwokrama International Centre |
| Conservation International (CI) Guyana Foundation |
| WWF Guianas programme |
| Guyana Marine Turtle Conservation Society (GMTCS) |
| North West Organics (NWO) |
| Liana Cane Interiors (LCI) |
| Environmental Protection Agency (EPA) |
| Ministries of Amerindian Affairs (MoAA), Agriculture and Tourism |
| GGMC (Guyana Geology and Mines Commission) |
| GFC (Guyana Forestry Commission) |
| Guyana Forestry Training Centre |
| Ministry of Foreign Affairs (MoFA) |
| Guyana Lands and Surveys Department |
| Centre for the Study of Biological Diversity, University of Guyana |

Evaluation outcome for representation as indicator for NRAMP existence

Evaluation indicator scores

Representation of NRAMP champions within integrated conservation and development NGOs and governmental agencies in Guyana = 1 (less than 50%)

Representation of key regional stakeholders at stakeholder meetings = 2 (average between 50% to 80%)

Representation of key national stakeholders at stakeholder meetings = 2 (average between 50% to 80%)

Number and capacity of NGOs and governmental agencies supporting integrated conservation and development in Guyana = 1 (inadequate)

Evaluation summary

A great effort has been invested by the NRAMP team in promoting the championing of the NRAMP within various integrated conservation and development NGOs and government agencies in Guyana. Although levels of participation by key regional and national stakeholders within NRAMP meetings have been adequate, the championing of the project within integrated conservation and development NGOs/government agencies has been disappointing. It seems clear that either these organisations do not have the internal capacity to engage with the NRAMP and/or they may have other strategic priorities. One indicator of this has been the participation within NRAMP meetings of relatively junior staff members from many of the national organisations. However, the difficulties encountered at regional level have been mostly due to logistical problems rather than lack of stakeholder interest. When participation from regional stakeholders was possible, this was undertaken by the most senior individuals.

Evidence for the limited capacity of national NGOs and governmental agencies supporting integrated conservation and development can be seen by the limited number of staff from the technical to management levels working in these organisations, the relatively low and intermittent availability of funding and the notable absence of grassroots environment/development groups. This is surprising when considering the extensive natural resource wealth of the country.

2.1.3 Clear communication and sharing of information

Rationale for clear communication and sharing of information as indicator for NRAMP existence

It is vital that any information about the NRAMP is accessible to as many people as possible and in as many different forms as possible, while at the same time the NRAMP is clearly and widely communicated to all stakeholders. A good dissemination strategy should include regular engagement with stakeholders, communities and the wider public through a range of platforms including stakeholder fora, wildlife festivals and community visits and through a variety of media such as in-house news bulletins, newspaper articles, radio programmes, television interviews, technical reports, scientific articles and websites. However, this is dependent on appropriate communication infrastructure and keen interest from media outlets and event organisers.

Monitoring outcome for clear communication and sharing of information as indicator for NRAMP existence

NRAMP indicator – NRAMP material is available both on-line (www.nrwetlands.org.gy) and in print form. This consists of the following:

- 1) the NRAMP (2008);
- 2) the Community Course;
- 3) the Ranger/Environmental Officer Course;
- 4) the Primary School material;
- 5) Wetland Bulletins (six issues to date);
- 6) Academic papers in international journals arising from the NRAMP project (two to date);
- 7) the State of the North Rupununi Report (2007);
- 8) the North Rupununi Monitoring Manual (2008);
- 9) Wetlands Tourist Guide;
- 10) Village level tourist maps (seven to date)

In addition, the information about the NRAMP has been disseminated through various media outlets. These include the following:

- 1) Newspaper – Outputs of stakeholder forum, published in *Stabroek News* on January 27th 2008 and *Guyana Chronicle* on January 28th 2008; Project update and relevance to wetlands, published in *Sunday Chronicle* on Feb 3rd 2008; End of project event, advertised in *Kaieteur News* on March 23rd; End of project and outputs, published in *Guyana Chronicle* on 31st March 2008.
- 2) Television - November 2007, project update; January 08, project update and relevance to World Wetlands Day; March 08: project update and relevance of outputs produced.
- 3) Radio – four slots on Radio Paiwomak in the North Rupununi. The NRAMP project has also contributed to the development of other programmes on the station.

Five NRAMP Stakeholder Fora have taken place to date (see Tables 2.4 and 2.5) and a number of community visits.

Environment indicator

Although the number of Internet users in Guyana has grown from zero in 1990 to 213,000 in 2005^b, the quality and reliability of connections is still limited (particularly during the rainy season), most notably in the remote interior regions. By April 2008, the North Rupununi had five on-line access points through satellite connections: Bina Hill Institute (Annai Central); Rockview Lodge (Annai Central); Caiman House (Yupukari); Surama Resource Centre (Surama); and the Iwokrama Field Station (Iwokrama Forest).

Table 2.7 shows that regular media coverage of conservation and development issues within Guyana is limited.

Table 2.7 Conservation and development reporting in Guyana

| Name of programme / feature | Name of media outlet | How often broadcast | Length of programme / feature | Issues covered |
|------------------------------------|-----------------------------|----------------------------|--------------------------------------|--|
| EPA Programme | NCN - television | Weekly (Tuesday mornings) | 15 minutes | All conservation / environmental matters are discussed |
| EPA Column | Sunday Chronicle | Weekly | 2 pages | All conservation / environmental matters are discussed |
| WWF-Guianas | Sunday Chronicle | Not fixed | 1 page | Fresh Water Conservation |
| 'Have your say' | NCN - television | Weekly | 15mins | All conservation / environmental matters are discussed |

Evaluation outcome for clear communication and sharing of information as indicator for NRAMP existence

Evaluation indicator scores

Evidence of appropriate information dissemination = 3 (excellent)

Evidence of constructive engagement with regional NRAMP stakeholders = 1 (less than 2 per year)

Evidence of constructive engagement with national NRAMP stakeholders = 2 (2-3 per year)

Evidence of constructive engagement with NRAMP communities = 2 (2-3 per year)

Access to on-line communication infrastructure = 1 (inadequate)

Number of media outlets reporting on conservation and development issues = 1 (inadequate)

Evaluation summary

The NRAMP team has worked very hard in disseminating project outputs through a range of media, including distribution of printed copies to all key stakeholders and communities. This included quarterly project bulletins to all communities and stakeholders. A boost to the dissemination strategy has been funding from the British High Commission to distribute the school packs to all 450 primary schools in Guyana. An information rich website has also been launched which can be readily updated by community members. Unfortunately Guyana is badly serviced by international Internet links, and the monopoly in Internet service provision further exacerbates the situation with limited accessibility and low band-width within the North Rupununi. This limits the usefulness and adaptability of the NRAMP website at this stage.

The national and regional media has been actively engaged with a range of articles, radio programmes and television interviews focused on the NRAMP. Considering the international, national and regional significance of the NRAMP and North Rupununi Wetlands in general, without proactive engagement from project team members, there would have been limited opportunities for the NRAMP to be represented within existing environmental/conservation media provision. This continues to significantly limit the raising of environmental/conservation awareness within the general population.

Face-to-face engagement with regional stakeholders continues to be extremely challenging due to logistical constraints. Meetings arranged for national stakeholders in Georgetown are significantly easier to organise since most stakeholder agencies are based in the capital.

2.1.4 Knowledge of the NRAMP and issues of ecological sustainability and social justice

Rationale for knowledge of the NRAMP and issues of ecological sustainability and social justice as indicator for NRAMP existence

Knowledge among stakeholders and facilitators of the NRAMP and its approach is vital for its existence. Since the inception of the Darwin Initiative Wetland project, a concerted effort has been undertaken to engage a wide range of stakeholders in raising their awareness with regards to fundamental NRAMP principles and processes. However, understanding these requires people to have some more general awareness of issues to do with ecological sustainability and social justice through academic and extra-curricula activities.

Monitoring outcome for knowledge of the NRAMP and issues of ecological sustainability and social justice as indicator for NRAMP existence

NRAMP indicator – Using written questionnaires (see Table 2.8) and video interviews at stakeholder fora and community visits, we are able to build a picture of the general understanding of the NRAMP within

stakeholders. These indicate that many stakeholders have heard of the NRAMP and were able to articulate some aspects, notably the learning cycle and adaptive nature approach, and the potential outputs.

Environment indicator

Access to primary and secondary school curricula was not possible. However, a review of the Ministry of Education's Strategic Plan (2002) indicates that the educational system does not sufficiently focus on the training of Guyanese in science and technology, on technical and vocational subjects, on business management, and on computer science^{ef}. In addition, the secondary school curriculum and the general teaching methodology are driven by the examination process and not by an overriding concern to stimulate and encourage critical thinking and optimise assimilation of material^e.

In 1999-2005, only 14% of tertiary level students in Guyana were studying in the subjects of science, engineering, manufacturing and construction^b. In 2008, the University of Guyana offers the following relevant degrees: Faculty of Agriculture and Forestry - BSc Forestry, BSc Agriculture; Faculty of Natural Sciences – BSc Biology; School of Earth and Environmental Sciences – BSc Environmental Sciences, BA Geography. The number of students in relevant university degrees is shown in Table 2.9.

The local, national and international integrated conservation and development NGOs for which there is public membership include the Volunteer Youth Corps, Guyana Amazon Tropical Birds Society, Envirogators Organization of Guyana, President's Youth Award - Republic Guyana, Women Environment and Development Organization, Red Thread, Youth Challenge Guyana, Green Path Foundation and Scout Association of Guyana. Although data for membership numbers was requested from these organisations, the majority were reluctant to give this information, and only the Scout Association of Guyana gave a figure of 980 for 2007.

Evaluation outcome for knowledge of the NRAMP and issues of ecological sustainability and social justice as indicator for NRAMP existence

Evaluation indicator scores

Ability to articulate the context, principles, process and outputs of the NRAMP = 1 (inadequate)

Relevant topics covered in national school curricula = 1 (inadequate)

Number of university graduates in relevant disciplines = 1 (inadequate)

Membership of local, national and international integrated conservation and development NGOs = 1 (inadequate)

Evaluation summary

Although many stakeholders demonstrated knowledge of NRAMP “buzz words” during interviews, such as ‘learning cycle’ and ‘adaptive’, on deeper investigation it is apparent that there is limited understanding of the direct relevance of NRAMP principles and processes. One of the factors contributing to this has been the use of overtly academic and technical language both in our presentations and reports which we have tried to address by involving Guyanese team members in developing examples and case studies. But this is a long process and there are many areas still lacking ‘translation’ for local understanding. Unfortunately, this is part of a much greater problem of human capacity within Guyana. Educational provision at all levels is basic. For example, up to 50% of primary school teachers have not received formal training. This is also apparent in higher education institutions where there are insufficient graduates in relevant disciplines and even these have below standard knowledge and skills e.g. many are not able to write grammatically correct English

Table 2.8 Questionnaire responses of stakeholders at the January 2007 NRAMP Stakeholder Forum. Note that affiliated organisations are at the time of the forum.

| Name | Institution represented | Position | Response to: Do you know what the North Rupununi Adaptive Management Process (NRAMP) is? | Response to: If yes, briefly describe your understanding of NRAMP |
|----------------------|---------------------------------|--|---|---|
| Rawle Lewis | Guyana Forestry Commission | Planning Officer | Yes | This is an initiative established to generate income, build capacity, and identify stakeholders of the North Rupununi wetlands. |
| Raquel Thomas | Iwokrama | Director, Resource Management and Training | Yes | Strategic plans for the sustainable management/use of the natural resources in the North Rupununi. Adaptive suggests that plans are dynamic –not static- and modifications will occur based on changes occurring on the ground. |
| Chuvika Harilal | Environmental Protection Agency | Environmental Officer 1 | Yes | The NRAMP is for the sustainable use of the North Rupununi wetlands. It involves the utilization of all available resources effectively to produce maximum outputs. It's an adaptive plan that can change to suit the needs of the wetlands and the people, based on the current status of the environment. It is implemented mainly through education (building capacity) so as to ensure sustainable livelihood practices in the communities. It also involves monitoring by various stakeholders/partners who through this process will provide guidelines for adaptive decision making. |
| Hemchandrauth Sambhu | Iwokrama | Research Assistance | Some what - I have an idea | It looks at resource use by people and how to continue for the sustainable use of these resources. It will do this through a learning/doing cycle. |

| | | | | |
|-----------------|---|---|-----|--|
| Tasreef Khan | Guyana Forestry Commission | Deputy commissioner of forestry | Yes | It is a Darwin funded project, which started in 2003. It is more of a capacity building project. |
| *Johann Earle | Stabroek News | No | | |
| Delano Davis | North Rupununi District Development Board | Secretary | Yes | The NRAMP was used with full participation of all communities of the NRDDDB and the different stakeholders involved in the wetlands project. It's aim is to manage the natural resources in the wetlands areas for sustainable use. It is a process that is subject to change. |
| William Andries | North Rupununi District Development Board | Chairman | Yes | To motivate an awareness of natural resources and its use. To realize the impact of natural resources exploited or extracted from its habitat and changes it causes on the existing ecosystem. To understand the changes and challenges that development brings, at the same time knowing how to better manage the natural resources for future generations. |
| Aiesha William | World Wildlife Fund, Guyana | Consultant-wildlife, freshwater gold mining pollution | Yes | A management approach for the Rupununi wetland areas which attempts to ensure the conservation and wise use of the area. It employs a strategy which adapts to the changes of the environment and activities occurring in the area in order to make the plan accomplish success (conservation wise use). |
| Rodney Davis | North Rupununi District Development Board | Executive Director | Yes | It's a structure of how communities can better manage, conserve and protect their community's renewable, non renewable resources. Using natural resources to generate income. Monitoring and evaluating community project yearly to understand what were the negative and positive things and to further make changes to rectify the negative. |
| Sydney Allicoek | Bina Hill Institute | Coordinator | Yes | It's a collective research, learning and data compilation by researchers and communities to hopefully assist communities for better livelihood planning. |

*Since the January 2007 Stakeholder Forum, Mr Earle has taken a keen interest in the NRAMP and by April 2008 was identified as a NRAMP Champion (see Table 2.3)

| Name of programme | Numbers graduated in | | | | | | | | | | | | |
|--|----------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| Certificate in Tourism Studies | 7 | 11 | 9 | PNLO | PNLO | PNLO | PNLO | PNLO | PNLO | PNLO | PNLO | PNLO | PNLO |
| Diploma in Tourism Studies | 0 | 12 | 13 | 18 | 13 | 14 | 15 | 13 | 13 | 24 | 10 | 13 | 8 |
| Diploma in Geology | 2 | 0 | 13 | 3 | 8 | 3 | NES | NES | NES | NES | 0 | 3 | 0 |
| Diploma in Mining Engineering | 2 | 0 | 3 | 1 | 2 | 3 | 1 | NES | NES | NES | 0 | 0 | 2 |
| Diploma in Forestry | - | - | - | 6 | 3 | 9 | 8 | 11 | 3 | 6 | 7 | 12 | 4 |
| BSc Biology | 10 | 11 | 16 | 9 | 9 | 18 | 12 | 19 | 14 | 31 | 18 | 33 | 36 |
| BSc Chemistry | 8 | 4 | 17 | 7 | 11 | 11 | 3 | 15 | 10 | 14 | 12 | 8 | 11 |
| BSc Environmental Science | - | - | 17 | 6 | 6 | 9 | 10 | 12 | 9 | 7 | 5 | 4 | 9 |
| BA Geography | - | - | - | - | - | - | - | - | - | - | 10 | 10 | 11 |
| BSc Forestry | 7 | 9 | 18 | 11 | 14 | 16 | 7 | 12 | 8 | 17 | 11 | 12 | 11 |
| BSc Agriculture | 16 | 15 | 16 | 20 | 19 | 19 | 19 | 15 | 11 | 17 | 12 | 16 | 19 |
| BSc Tourism Studies | - | - | - | - | - | - | - | - | - | - | 11 | 16 | 5 |
| Degree of Technology in Mining Engineering | 6 | 1 | 1 | 0 | 2 | 0 | 0 | 3 | 2 | 2 | 0 | 1 | 1 |
| Post Graduate Diploma in Development Studies | 1 | 0 | 1 | 4 | 8 | 5 | 8 | 7 | 9 | 8 | 20 | 18 | 26 |
| MSc Forest Biology | 1 | 0 | 0 | 2 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 |

Table 2.9 Number of students at the University of Guyana in relevant degree programmes from 1995 to 2007. Source: University of Guyana Statistical Data 1995-2007, prepared by the Office of Resource Mobilisation and Planning, University of Guyana.

Notes

Environmental Science - First set of graduates from programme was in 1997. Diploma in Forestry - First set of graduates from programme was in 1998. NES = Not enough students to validate programme. PNLO = Programme no longer offered

and lack critical reflection skills. There is also limited popular support for Guyanese integrated conservation and development NGOs and many of these rely almost solely on international donor funding for survival. This reflects the overall limited capacity for supporting environmental and social transformation within Guyana.

2.2 Resistance – can the NRAMP stay the same with changing conditions?

2.2.1 Stable and regular support

Rationale for stable and regular support as indicator for NRAMP resistance

The NRAMP and its champions need both community and wider stakeholder support, both in terms of funding and in-kind contributions, which is stable and continuous, so as to be able to stand firm against any external pressures. This can be represented as direct cash contributions or indirectly via employment within NRAMP stakeholder organisations to support NRAMP champions, meetings and training. At the local and regional level, this will depend on community viability in terms of economic and social well-being. In other words, the more viable a community is, the greater its capacity to support the NRAMP. The same is relevant with regards to national and international funding for conservation and development. The healthier a national economy the greater is the support for conservation and development initiatives (although one could also assume that pressures on natural resources would also increase with increasing prosperity). In cases where economic prosperity is lacking, integrated conservation and development initiatives are wholly dependent on international donor funding – in these circumstances it is the level of continuous funding available which determines the long-term sustainability of these projects.

Monitoring outcome for stable and regular support as indicator for NRAMP resistance

NRAMP indicator – Table 2.10 shows that to date there has been regular external funding for the NRAMP and its activities, and employment for some NRAMP champions within Guyanese organisations. However, there have been few cash or in-kind contributions from the Guyanese government or the local communities.

Environment indicator – There is limited data for assessing community viability in the North Rupununi. Information gathered between 2004 and 2006 for the State of the North Rupununi Report (2006) highlighted that the communities living in the North Rupununi were heavily reliant on natural resources for their livelihoods, against a background of limited health and education provision. In addition, the data suggests that there is significant potential for improving the livelihood support through, for example, ecotourism activities and wildlife harvesting, as both are still in their infancy within the North Rupununi.

The GDP per capita for Guyana in 2005 was US\$4,508^b. The number of people in employment from 1996 to 2005 was 240,000, and of these, 28% were employed in the agricultural sector, 23% in industry and 48% in services^b. Note that this does not reflect the numerous informal initiatives (e.g. ad hoc roadside market stalls) and their associated workforce.

Although there are a number of organisations and projects accessing funding from international bodies, for example, the WWF, Conservation International, Iwokrama International Centre, the Guiana Shield Initiative (UNDP funded), the Wetlands NRAMP Project (UK government funded), Bina Hill Institute (UK NGO funded with some limited Guyanese government support) there is no data on the total amount of funding received by Guyana for biodiversity conservation and natural resource management. However, there are figures for official development assistance to Guyana – this was a total of US\$136.8 million (US\$182.1 per capita) in 2005, falling from 42.4% to 17.4% of GDP from 1990 to 2005^b.

Table 2.10 Community, wider stakeholder and external funding and in-kind contributions that have been made available to the NRAMP and its activities to date

| Contribution/Dates | Activity | Donor |
|---|---|---|
| £132,000, 2003-2006 | Collecting baseline biophysical and social data on North Rupununi wetlands and developing the NRAMP | Darwin Initiative, DEFRA, UK Government |
| £105,000, 2006-2008 | Implementing the NRAMP in communities and to wider stakeholders | Darwin Initiative, DEFRA, UK Government |
| Communal spaces, such as Village Meeting Halls, 2003-2008 | Community visit meetings and training activities | 16 North Rupununi villages |
| £45,000, 2005-2006 | Developing on-line information system for the NRAMP | Economic and Social Research Council, UK Government |
| £7500, 2007-2008 | Developing use of Participatory Video in North Rupununi | British Academy, UK Funding Body |
| £2500, 2008 | Publishing Wetlands School Packs for distribution throughout Guyana | British High Commission in Guyana |
| Full-time post of NRAMP champion, Indranee Roopsind, at Bina Hill Institute, North Rupununi | Introducing NRAMP principles and processes within training activities at Bina Hill Institute | Bina Hill Institute (via Government of Guyana and international donors) |
| Full-time post of NRAMP champion, Odacy Davis, at Conservation International Guyana | Introducing NRAMP principles and processes within activities at Conservation International | Conservation International Guyana (via international donors) |
| Full-time post of NRAMP champion, Aiesha Williams, at WWF-Guianas | Supporting local and national projects based on NRAMP approach | WWF-Guianas (via international donors) |
| Full-time post of NRAMP champion, Orville Davis, at NRDDDB, North Rupununi | Implementing NRAMP approach within Black Caiman project, North Rupununi | WWF-Guianas (via international donors) |

Evaluation outcome for stable and regular support as indicator for NRAMP resistance

Evaluation indicator scores

Amount of regular community generated income and/or in-kind contributions to support NRAMP and its champions = 1 (inadequate)

Amount of regular government/external funding and/or in-kind contributions available for the NRAMP and its champions = 1 (inadequate)

Evidence of increasing community viability = 1 (inadequate)

Evidence of availability of funding for biodiversity conservation and sustainable development from personal, national and international donors = 1 (inadequate)

Evaluation summary

To date, direct and indirect regular support for the NRAMP has been almost totally dependent on international funding. Even the current employment of NRAMP champions within Guyanese institutions is dependent on this. This lack of diversity in support places the continuing evolution and implementation of the NRAMP under risk due to the intermittent and unpredictable nature of international funding ‘fashions’ for particular causes, and the characteristics of international funder projects which are mostly short term (1-3 years).

One way to increase NRAMP resilience is for it to gain direct and in-kind support from the communities that are currently benefiting from the approach. However, these communities are clearly in a vulnerable position as they continue to be affected by poor health and limited education provision, as well as a deterioration in traditional livelihood activities which is not compensated by enough opportunities within the mainstream market economy. Guyana’s GDP indicates that there is limited national capacity for supporting conservation and development initiatives. This means that for these the country is almost entirely reliant on international donor funding. A highly relevant example is the recent initiative by Guyana’s President, Bharrat Jagdeo, to offer to place the country’s extensive rainforests under the control of an international body in exchange for ‘development aid’ and ‘technical assistance needed to make the change to a green economy’ (see Howden, D. “Take over our rainforest” in the *The Independent*, 24th November 2007 for more details).

2.2.2 Community access to land and natural resources

Rationale for community access to land and natural resources as indicator for NRAMP resistance

The rights and titles to land (and its associated resources) provides communities with security and autonomy over sustainable resource use and protection. The government and local communities should be committed to finding ways of sustainably using natural resources and protecting areas against unsustainable exploitative activities. One of the ways this could be achieved is to provide decision-making powers over natural resource extraction levels to those communities who have adequate capacity to control and limit exploitation to keep within sustainable levels. The starting conditions for this usually involve assigning legal rights to communities over land and resources incorporating all traditional areas of use. An alternative approach which does not necessarily have to be in conflict with the latter is to designate and support areas for conservation.

Monitoring outcome for community access to land and natural resources as indicator for NRAMP resistance

NRAMP indicator – In 2000, 60% of the Amerindian communities in Guyana held title to some of their traditional lands, totalling 7 percent of the Guyanese national territory. This increased to 13 percent by March 2006ⁱ.

Figures 2.1 and 2.2 indicate the land status for Guyana and the North Rupununi respectively. The area of titled land in the North Rupununi covers all villages except Toka^l. Figures could not be obtained for the area of state land in the North Rupununi, although it is significant.

At present there is one Community Forest Concession in the North Rupununi. The Annai District Concession is a community managed forest area, which has been legally titled to the District of Annai as Indigenous land. In 2003, two State Forest Permits for a total of 14,579 ha were issued to the North Rupununi District Development Board (NRDDB) by the Guyana Forestry Commission for the purposes of timber extraction. The NRDDB then created a separate subsidiary body called the Macushi Yemeken Co-operative. This cooperative body was delegated to be responsible for the management of the forest resources and the management of the timber business. There is also an application by Surama Village to the Guyana Forestry Commission for a Conservation Concession near their land. However, no data is available on the progress of this application.

Although the Rupununi Wetlands have been identified as a potential RAMSAR site, Guyana is the only country in South America that has not acceded to the RAMSAR Convention on Wetlands.

Environment indicator – There are no biosphere reserves or RAMSAR sites in Guyana. 76%, equivalent to 163,777 square kilometres, of Guyana is under forest cover, and of this, 136,000 km² is State Forest Area^e. To date, Guyana has two national protected areas: the Kaieteur National Park, covering 62.7 km² and the Iwokrama Forest covering 3,710 km². The total land area protected to maintain biological diversity was 5,201 km² in 2006, 2.3% of the country's land area^e, and one of the lowest in South America^k. As well as the Iwokrama Forest, the other protected area in the North Rupununi is the Conservation International 'Conservation Concession', established in July 2002 with the Government of Guyana. Conservation International obtained a 30-year logging license for 200,000 acres of the upper Essequibo River watershed, with the objective of managing the area for conservation rather than timber exploitation. For this right, Conservation International pays the Government of Guyana annual fees comparable to those that would have been paid by a logging company, and has also provided a Voluntary Community Investment Fund (VCIF) to ensure benefits to local communities.

The Government of Guyana is currently developing a National Protected Areas System, which will include the two national protected areas as well as the Kanuku Mountains, Mount Roraima, Orinduik Falls, Shell Beach and the Southern Region, bringing the total protected land to 11,400 sq km or 5.3% of Guyana's total land area^e. Figure 2.3 shows the areas of biological interest as an outcome of the first National Biodiversity Action Plan in 1999.

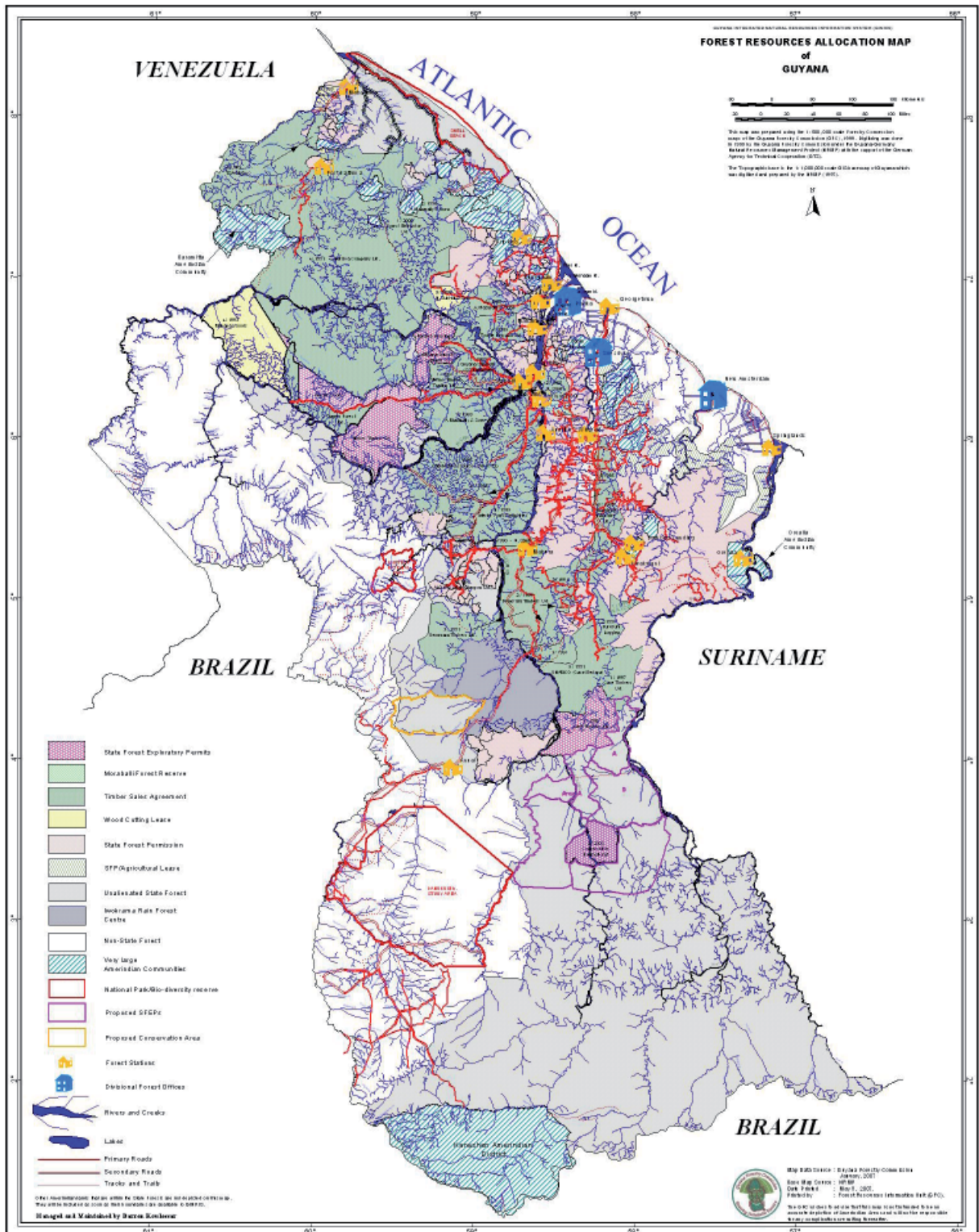


Figure 2.1 Map showing land and forest status in Guyana in 1999 (with kind permission of the Guyana Forestry Commission)

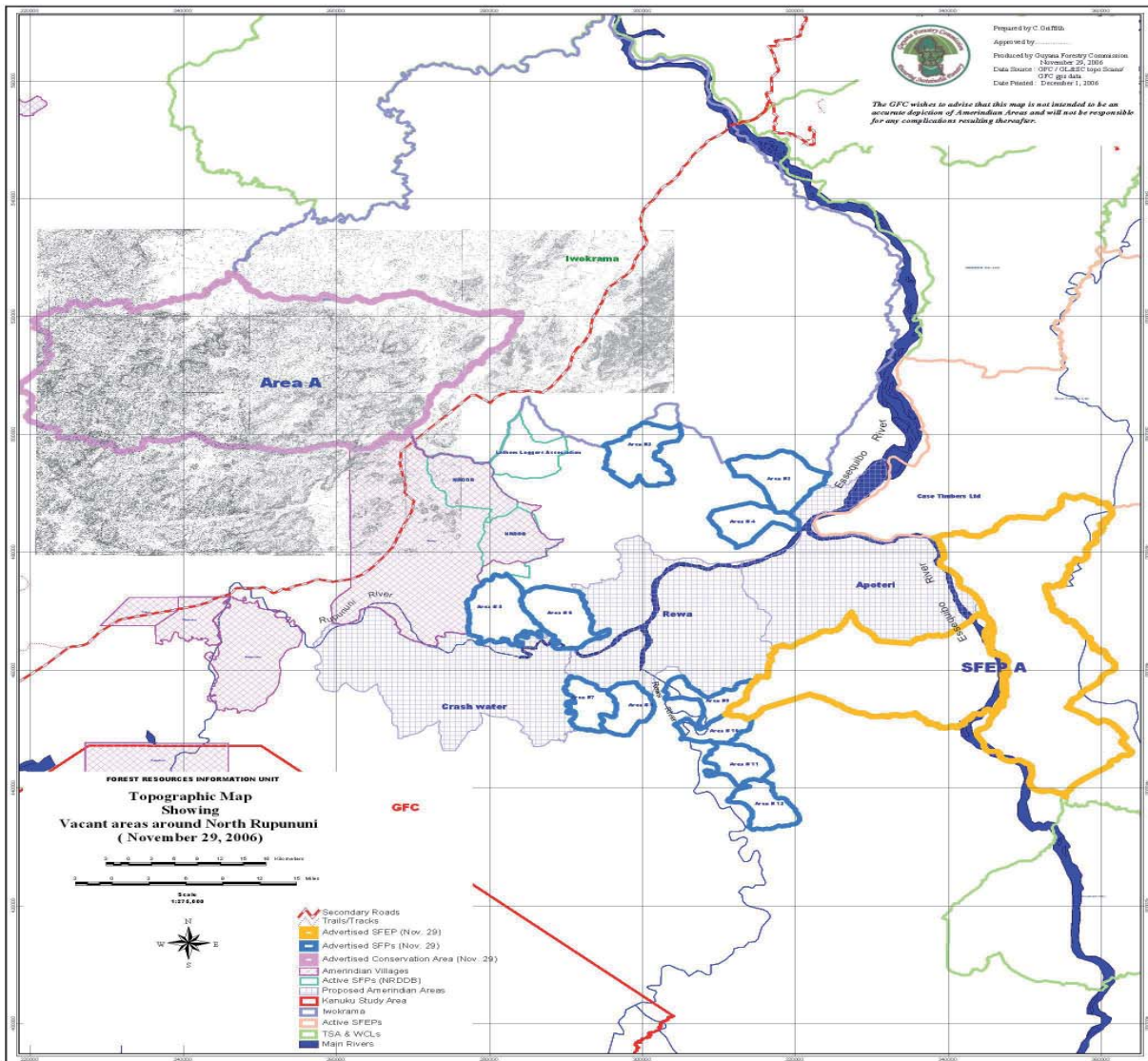


Figure 2.2 Map showing land status in the North Rupununi in 2006 (with kind permission of the Guyana Forestry Commission). Note that the forest concessions outlined in blue were advertised in early 2007 but not granted.

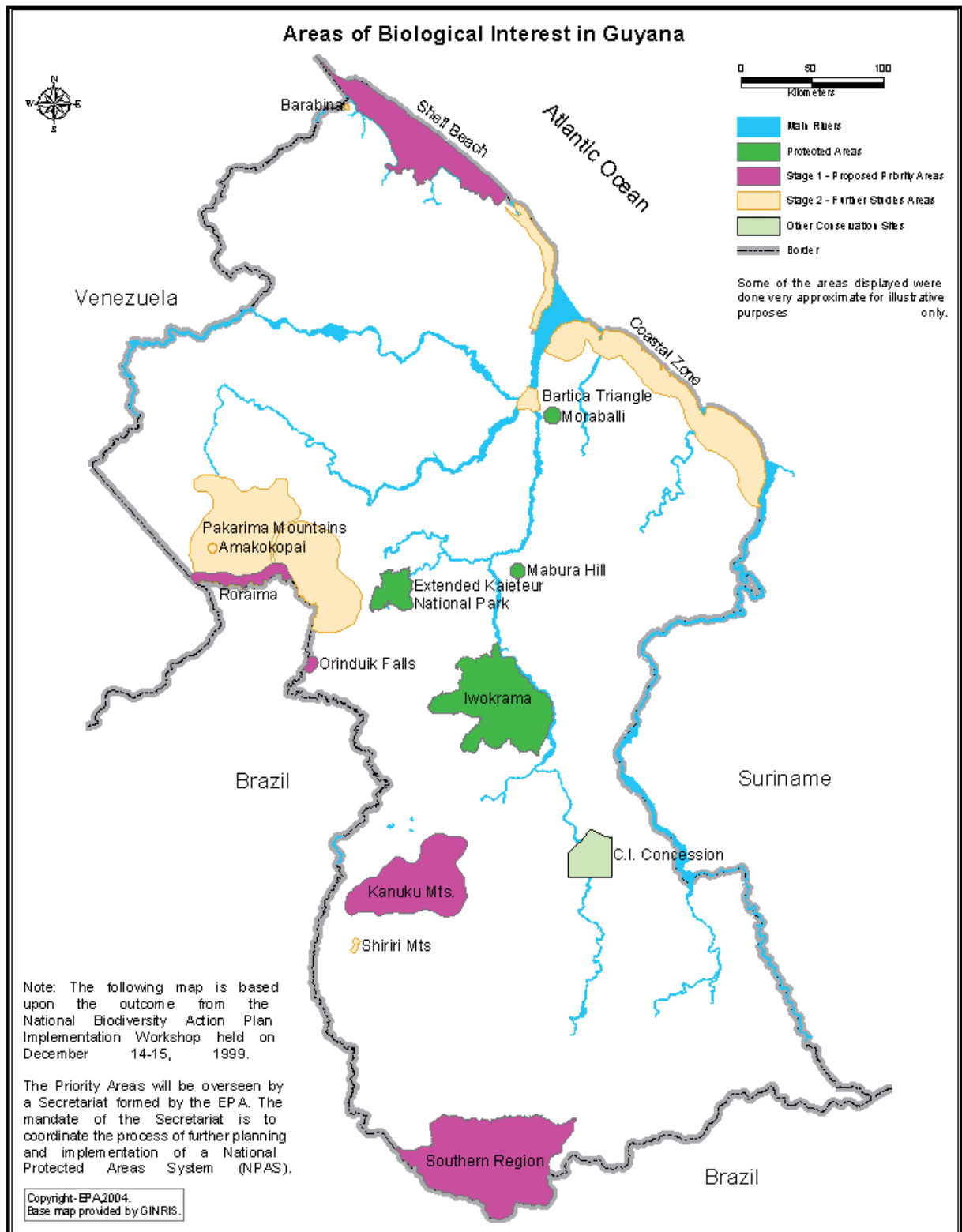


Figure 2.3 Map showing areas of biological interest in Guyana in 1999 (with kind permission of the Environmental Protection Agency)

Evaluation outcome for community access to land and natural resources as indicator for NRAMP resistance

Evaluation indicator scores

Area of titled land in the North Rupununi = 2 (majority of communities have land rights restricted to area of habitation and its immediate surroundings)

Area of state land secured for community use and/or biodiversity conservation in the North Rupununi = 1 (low proportion of traditional use areas (less than 33% of area)

Ratification of RAMSAR Convention = 1 (limited evidence of progress)

Approval of Community Conservation Area/Concessions = 1 (limited evidence of progress)

Area of land dedicated to sustainable natural resource management and biodiversity conservation = 1 (below regional/international average)

Evaluation summary

Although the interior of Guyana is mostly populated by Amerindian communities who have traditionally used extensive areas to sustain their livelihoods, most of the land is under direct government control. As a result, many of these communities have no official rights to the resources contained within their traditional areas and exploitation of these can be given to national and foreign business interests with limited consultation and compensation.

Government policies and actions have to date focused on maximising the licensing of interior land to national and international extractive industries such as timber and mining operations. Limited efforts have been expended to safeguard areas of high conservation and/or scenic value. Although Kaieteur National Park and the Iwokrama Forest have been protected by law, other areas including the Rupununi Wetlands (with one of the highest freshwater biodiversity in the world), is not officially recognised for protection, indicated by the lack of progress of the Guyanese government to ratify the RAMSAR Convention.

2.2.3 Institutional and policy integration

Rationale for institutional and policy integration as indicator for NRAMP resistance

The integration of the NRAMP within institutional processes and wider policies will help determine its wider acceptance within natural resource management frameworks. The greater the number of institutions adopting and evolving the NRAMP approach, the greater the chances of the NRAMP becoming an accepted and popular mechanism for natural resource management in Guyana. This will also require a degree of compatibility of wider policies and strategic directions with the NRAMP principles and processes.

Monitoring outcome for institutional and policy integration as indicator for NRAMP resistance

NRAMP indicator – To date, the EPA has indicated that the Ranger/Environmental Officer course will form part of core institutional training for all its Environmental Officers. Iwokrama, Conservation International and the Bina Hill Institute have indicated that they would like to use all or parts of the Community and Ranger/Environmental Officer courses as training courses available in their institutions. The NRDDDB has indicated that it would like to have the NRAMP as the approach for implementing the PRMU (see Environment indicator below) in the villages of the North Rupununi.

There is no evidence to date on the NRAMP being incorporated into local or national policy.

Environment indicator – The NRAMP 2008 includes a review of current national and international policies within which NRAMP operates (Table 2.11). To date, these only include natural resource management related policies. However, an extensive list of current laws of Guyana can be found at www.gina.gov.gy/gina_pub/laws/tableofcontents.pdf.

Although in theory, many of these policies advocate the key principles of the NRAM, namely ecological sustainability and social justice, in practice and at the local scale there is much ambiguity. For example, the Amerindian Act legally designates rights to Amerindian communities over forest use and control in titled land. However, there continues to be no real transparent and adequate legal instrument to ratify and demarcate traditional boundaries. This can lead to a lack of clarity over boundaries, unilateral discretion by the Amerindian Minister over the location and extent of land titles and continued exploitation by national and foreign investors of traditional Amerindian land.

Table 2.11 Natural resource management related policies in Guyana

| Policy | Summary of aims |
|---|---|
| Convention on Biological Diversity (CBD) | This convention promotes the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits from the use of genetic resources. |
| Amerindian Act 2006 | This act seeks to provide the recognition and protection of the collective rights of Amerindian communities, the granting of land to Amerindian communities and the promotion of good governance within the Amerindian communities. |
| Wild Birds Protection Act | This act will provide for the protection of certain wild birds. |
| Guyana Tourism Authority Act | This act seeks to provide for the functions of the Guyana Tourism Authority, such as tourism development. |
| Guyana Forestry Commission Act | This act seeks to provide the establishment and the function of the Guyana Forestry Commission, including the management of forest and developing forest policies. |
| Iwokrama International Centre for Rain Forest Conservation and Development Act | This act provides for the sustainable management and utilization of the Iwokrama Forest. |
| Environmental Protection Act | This act provides for the management, conservation, protection and improvement of the environment. |
| Forest Act | This act provides for the conservation and management of forests. |
| Water And Sewerage Act | This act provides for the ownership, management, control, protection and conservation of water resources, and for the provision of safe water, sewerage services and advisory services. |
| Mining Act | This act makes provisions with respect to prospecting for mining of metals, minerals and precious stones, and for regulating their conveyance. |
| Fisheries Act | This act provides for the conservation and management of fisheries. |
| Species Protection Regulations | This regulation seeks to provide protection of particular species of prescribed flora and fauna. |
| Wildlife Management and Conservation Regulation 2000 (Not Legal) | This regulation seeks to provide protection of particular species of prescribed flora and fauna. |
| Arapaima Management Plan | The Plan will allow the sustainable harvesting of Arapaima in the North Rupununi as well as regular monitoring of stocks. |
| Piyakita Resource Management Unit (PRMU) (Not Legal) | North Rupununi Natural Resource Management By-Laws for conservation, monitoring and regulating natural resource use. |

Amerindians do not possess any rights to sub-surface resources or surface waters on titled land^e. This means that exploitative activities can be explored and take place on titled land, as exemplified by the recent petroleum exploration around Rewa. Although there are procedures set out in the Acts for community participation and impact assessments, these are not adequately recognised in practice. Although Amerindian communities have legal rights over forest resources within titled lands, many communities use resources outside these rigid boundaries (and have been doing so through history). Amerindian communities have always enjoyed traditional usufruct rights for hunting and gathering activities on unallocated state lands. However, the government can sanction exploitative activities on those lands, although the Acts again mention consultation with and participation of communities when timber concessions are being drawn up for lands contiguous to theirs. The recent move to get local Amerindian communities in the North Rupununi to manage their natural resources through the PRMU will need careful monitoring and significant capacity building and external help, if it is to succeed. This initiative is trying to establish a regulatory agency which will require appropriate governance structures and processes, particularly within institutions such as the NRDDDB.

Evaluation outcome for institutional and policy integration as indicator for NRAMP resistance

Evaluation indicator scores

Evidence of integration of the NRAMP into 'institutional' frameworks = 2 (intended use of NRAMP processes and materials)

Evidence of direct reference to NRAMP within policies = 1 (no or little reference to NRAMP principles and processes)

Evidence of implications of other regional management plans and national level policies and regulations on the NRAMP = 1 (in conflict and/or incompatible)

Evaluation summary

There is evidence that several key stakeholders, principally the NRDDDB and the EPA, are promoting the adoption of the NRAMP principles and processes within internal staff training activities. However, these intentions are yet to be put into action. This is either the result of the relatively recent development of training material and/or good intentions with limited capacities to deliver. The adoption of NRAMP principles and processes within policies is highly politicised since there are direct implications with regards to decision-making powers. For example, the NRAMP promotes a bottom-up transparent and participatory decision-making framework whereas some individuals in positions of power may prefer the current status quo of top-down decision-making. Although some current regional management plans and national legislation and policy initiatives promote participation of local communities, few devolve power to the grassroots level or take an adaptive management approach.

2.3 Flexibility - Can the NRAMP accommodate changing conditions using existing resources?

2.3.1 Capacity and diversity

Rationale for capacity and diversity as indicator for NRAMP flexibility

The NRAMP will be able to deal with change if there is sufficient capacity (number of people able to work) and diversity (number of people with diverse skills) within facilitators. The capacity of individuals is dependent on a wide range of factors including their physical health (e.g. prevalence of tropical diseases such as malaria), their mental well-being (e.g. motivation of working in difficult conditions can be low), family obligations (e.g. lack of government services means individuals have to step in when there are family problems) and their limited ability to complement their knowledge and skills (e.g. the relatively basic educational provision does not foster diverse skills development). These aspects are obviously dependent on the overall mental and physical health status, educational provision and social services of the communities within which individuals live and operate.

Monitoring outcome for capacity and diversity as indicator for NRAMP flexibility

NRAMP indicator – There is no exact data for the number of days off work of facilitators through illness or other reasons. However, malaria, road accidents and mental health issues have been some of the health problems encountered by facilitators that have affected an estimated 50% of facilitators to date. The CVs for all NRAMP facilitators is not available, but Table 2.1 outlines the experience and skills of Guyanese NRAMP facilitators to date.

Environment indicator – At present, the dominant infectious diseases in Guyana are malaria, respiratory infections, sexually transmitted diseases, HIV/AIDS and tuberculosis, while other major causes of death are through stroke, heart disease, accidents and injuries^c. Guyana's first AIDS case was reported in 1987 and by the end of 2006 there were 9296 HIV/AIDS cases, with an estimated 81% in the 20-49 age group (particularly in the 25-29 age range)^c and ranked the third leading cause of all deaths in Guyana^c. Tuberculosis is also a major communicable disease, and death rates have decreased from 6.3% in 2000 to 5.8% in 2004, as a result of better detection and treatment systems^c. However, there is an estimated 20% co-infection with HIV/AIDS, so tuberculosis infections may still rise^c.

Although malaria is not considered a major cause of death overall in Guyana, it is particularly prevalent in the interior regions, such as Region 9 and the North Rupununi, where combined with malnutrition and repeated episodes the risk of mortality and morbidity is significantly greater. From 2000 to 2005, the prevalence of malaria has increased from 11.5% to 18.5%, most probably facilitated by the increase in mining and logging activities in remote interior regions^c.

Section 2.1.1 gives information on the education and training provision within Guyana. There are also various outlets providing specific training in areas such as IT in the main towns. Other forms of training are provided through, for example, projects (generally donor funded) in general areas such as community participation. To date, most natural resource management training takes place at Iwokrama (at the national level) and at the Bina Hill Institute within the North Rupununi.

Evaluation outcome for capacity and diversity as indicator for NRAMP flexibility

Evaluation indicator scores

Number of days off work of facilitators through illness e.g. malaria, or for other reasons e.g. family support = 2 (between 5-20% of working days off)

Evidence of a range of disciplinary backgrounds and experiences within NRAMP facilitators = 2 (adequate diversity of skills and experiences)

Level of risk factors e.g. healthy eating, malaria avoidance, physical fitness etc. = 1 (high risks to health)

Number and accessibility of different training and education courses available at local, regional and national level = 1 (inadequate)

Evaluation summary

In ideal circumstances, project management would have involved recording the number of days off work by staff. However, this level of staff monitoring was not carried out; yet it was evident from work patterns and monthly reports that NRAMP staff had taken certain time off work through illness and other causes. There is also the recognition that this indicator is relatively crude since many individuals may not have taken time off work but their daily working activities were affected e.g. individuals coming into work late or unable to concentrate. This situation mirrors the wider risks to health and inadequate social safety nets in Guyana which is in turn further exacerbated by the low quality of infrastructure and difficult environmental working conditions.

Considering the inadequate educational provision in Guyana, the staff profiles indicate that the project was able to recruit some of the most skilled and experienced staff members available. In particular, many staff members had excellent fieldwork and community engagement skills. However, these did not fully reflect the demands of the project especially in the areas of basic report writing, critical evaluation, oral communication and time management.

2.3.2 Autonomy

Rationale for autonomy as indicator for NRAMP flexibility

Having a degree of independence and self-reliance provides greater room for manoeuvre when dealing with external changes. Over reliance on 'command-and-control' management, especially from overseas direction, significantly limits the capacity for constructive progression with work. Showing initiative and the ability to think critically are necessary skills for maximising the amount of flexibility in order to achieve established goals. A frequent misunderstanding of 'critical reflection' skills is that these are seen as equivalent to 'complaining' – yet the core ability for critical reflection is to be able to communicate appropriate alternative solutions to problems. These aspects rely on an environment which promotes openness in opinion and alternative perspectives. The level of freedom within a culture, from the context of families to government, determines how able people feel to intervene within a situation. For example, highly repressive patriarchal and autocratic cultures are extremely deficient in this area.

Monitoring outcome for autonomy as indicator for NRAMP flexibility

NRAMP indicator – Up to April 2008, the new initiatives developed by NRAMP facilitators include: a) the Rewa turtle monitoring project – this was developed by Indranee Roopsind together with the village of Rewa to help manage the population of giant river turtles for ecotourism in the locality; the Black Caiman project – this was developed by Indranee Roopsind and funded by WWF-Guianas. The project aims to present a case to the IUCN to lower the status of the Black Caiman through the collection and analysis of

demographic and habitat data; Wetland Centre project – this was developed by Indranee Roopsind together with UK project members and local communities and a funding proposal has been submitted to the EU; Toka aquaculture project – this was developed by Indranee Roopsind together with the village of Toka.

To date, critical feedback to NRAMP development by Guyanese facilitators has been constrained. There are no formal records and the limited amount of feedback has been orally at NRAMP group or one-to-one meetings.

Environment indicator – Table 2.14 gives information for voice and accountability in Guyana (the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media). This shows that voice and accountability has actually deteriorated from 1996 to 2006.

Evaluation outcome for autonomy as indicator for NRAMP flexibility

Evaluation indicator scores

Evidence of autonomy in decision-making by the NRAMP = 1 (low levels)

Evidence of critical thinking within NRAMP facilitators = 1 (low levels)

Voice and accountability = 1 (inadequate)

Evaluation summary

One issue that Guyanese staff members repeatedly faced was low levels of self esteem, self motivation and lack of empowerment. Project work grinding to a halt when problems arose was frequently encountered and staff were often unable to express their concerns constructively, propose solutions and get on with implementing them. In some instances, when they did express these concerns they often did not receive an adequate response from immediate line managers so became disillusioned with their work. It was recognised that in part the project management structure was not necessarily appropriate for engaging with these issues, as outlined in Mistry *et al.* (2008). One exception to this general trend has been one of the NRAMP champions, Indranee Roopsind, who has independently initiated a number of projects during and following the NRAMP project.

As indicated by the monitoring results, the above issues are clearly a consequence of the deteriorating ability of civil society within Guyana to be represented at different levels of decision-making that are simply not a reflection of racial divisions and corrupt self interest. Members of the general public feel constrained in raising criticism against government and associated business interests, often resulting in their 'blacklisting' e.g. people losing their jobs or unable to gain government/business contracts/positions. Although research in this area is limited there is significant anecdotal evidence of this occurring and within natural resource management there is a steadfast reluctance to publicly critique any of the government's resource extractive activities of fear of being reprimanded in some way.

2.4 Adaptability - Can the NRAMP adjust to changing conditions using new resources?

2.4.1 Ability to evaluate and change NRAMP goals, principles, process and methods using the learning cycle

Rationale for ability to evaluate and change NRAMP goals, principles, process and methods using the learning cycle as indicator for NRAMP adaptability

As stated in the introduction, the current aim of the NRAMP is to facilitate effective and appropriate natural resource management to promote and sustain human and ecological health in the face of increasing social and environmental change. A series of principles and methods have been developed to accommodate this aim. This aim, and associated principles and methods, are obviously wide ranging and developed to accommodate the complexity of the situation. It may be the case that, over time, a more specific aim and more appropriate principles and methods could develop to address particular emerging concerns. This ability to change the goals, principles and methods of the NRAMP is crucial in maximising the adaptability of the process. In particular, the NRAMP will continue to be of relevance over time if people using the NRAMP are able to use the learning cycle to evolve the process according to changing circumstances. This in turn depends on a vigorous grassroots culture that can actively respond to and initiate environmental, social and political change.

Monitoring outcome for ability to evaluate and change NRAMP goals, principles, process and methods using the learning cycle as indicator for NRAMP adaptability

NRAMP indicator – The evolution of the NRAMP has started to occur at community level where individual communities have proposed specific goals and methods for addressing major local concerns. To date, livelihood initiatives have been facilitated by the NRAMP with six communities in the North Rupununi. These include: Farming - Massara; Handicraft making – Annai Central; Aquaculture – Toka; Giant River Turtle Egg Harvesting – Rewa; Ecotourism – Aranaputa and Surama. However, there is little evidence that goals, principles and methods have been adapted at higher scales of decision-making.

Environment indicator – The legacy of the Burnham Forbes regime until 1985 and the race-politics that ensued, still dominate political (as well as daily) life today in Guyana. This, together with the low levels of good governance (see Section 2.4.3), mean that current political and social movements are limited in their effectiveness in significantly promoting social justice and ecological sustainability. However, there are many civic society organisations and a 1998 survey listed 777 and categorised these broadly as Advocacy (18), Development (477), Political (8) and Service (274)¹. The majority of these civic society organisations (649) were at the local community level, while 93 were national in scope, 33 had a regional (within Guyana) impact and only 2 were international¹.

Of particular relevance to issues of natural resource use in interior regions, such as the North Rupununi, is the impact and influence of grassroots indigenous movements. The indigenous peoples of Guyana continue their struggle for rights to land and resources, as well as equal treatment in terms of political representation and access to public services. The Amerindian Peoples Association is the primary organisation leading this movement. They are supported by a number of smaller indigenous peoples NGOs as well as social justice groups such as Red Thread Women's Development Organisation. This organisation aims to mobilise, empower and improve the conditions of women across the divides of race/ethnicity, class, religion and geography. Some of their recent and on-going campaigns have been on indigenous rights, domestic violence, child abuse, equal working rights and the abolition of corporal punishment in schools.

Evaluation outcome for ability to evaluate and change NRAMP goals, principles, process and methods using the learning cycle as indicator for NRAMP adaptability

Evaluation indicator scores

Evidence of community use of the learning cycle to evaluate and change NRAMP goals, principles, process and methods = 2 (some change of NRAMP goals, principles, process and/or methods)

Evidence of national level stakeholder use of the learning cycle to evaluate and change NRAMP goals, principles, process and methods = 1 (no change to NRAMP goals, principles, process and methods)

Impact and influence of grassroots political and social movements in Guyana = 2 (moderate impact)

Evaluation summary

From the outset, the NRAMP was not developed as a static document, and there was an expectation that it would evolve over time to meet specific local and national concerns. Built in to the process is a need to review goals, principles, process and methods at least on a yearly cycle and for new yearly editions of the NRAMP to be published.

Thanks to concerted efforts to engage the North Rupununi communities, there is some evidence that the NRAMP has been adapted to local needs, although this was still dependent on financial and logistical support by the Project. However, there is still some way to go towards changing the overall language and approach of the NRAMP to suit local modes of communication. For example, the presence of an NRAMP facilitator was still necessary to 'translate' the NRAMP vocabulary as outlined in the printed document into a language accessible by the local community. Of particular concern is the need to engage with the methodological section of the NRAMP which at the moment seems to be totally by-passed and replaced by basic verbal discussions through the learning cycle.

At the national level, there is still a need to build capacity in engaging with the existing NRAMP documentation, so its evolution is still seen to be a long way off at present. There is evidence that at local, regional and national level, a range of grassroots civic society organisations are taking various initiatives to change the social, political and environmental situation in Guyana. Yet, it is clear that at present they lack the critical mass to challenge the current social and political status quo.

2.4.2 Education and training

Rationale for education and training as indicator for NRAMP adaptability

It is vital for the future that people progress to higher levels of training for the implementation and development of the NRAMP. The three main levels of NRAMP training, community, ranger/environmental officer and postgraduate, have been developed to progressively go into greater methodological detail and raise the level of critical awareness. In particular, postgraduate studies are advanced level courses that aim to expand the depth of knowledge and hone skills, such as holistic thinking, ability to manage complexity and change, critical awareness, group working, leadership and project management, oral and written communication, reflectiveness and empathy.

This therefore implies that individuals who go onto higher levels of training would be able to be increasingly critical on and contribute to adapting material from previous training. However, this depends on the basic education levels of NRAMP users and, in the case of the postgraduate course, the availability of appropriate lecturers within Guyanese universities to support teaching and learning activities in these areas. Currently, NRAMP training is significantly impeded by the relatively low educational levels of participants and low teaching capacity. Improvements in the overall educational provision would in turn significantly facilitate progress through NRAMP training.

Monitoring outcome for education and training as indicator for NRAMP adaptability

NRAMP indicator – To date, there have been no individuals who have progressed between NRAMP training courses. In addition, up to April 2008, the course has not been delivered.

Environment indicator – Section 2.1.1 gives information on the education and training provision within Guyana. There are very few lecturers at the University of Guyana that teach and research in the areas of natural resource management and sustainable livelihoods. Even fewer have qualifications at PhD level. The School of Earth and Environmental Sciences have some individuals in these areas, but capacity is generally very limited.

Evaluation outcome for education and training as indicator for NRAMP adaptability

Evaluation indicator scores

Number of people passing through the different levels of NRAMP training and educational courses from basic knowledge to critical awareness = 1 (less than 50%)

Number of knowledgeable and skilled individuals potentially available = 1 (low capacity)

Number of lecturers with skills/knowledge for engagement at postgraduate level in the area of natural resource management/sustainable livelihoods within Guyana = 1 (low capacity)

Evaluation summary

The material for the various levels of NRAMP training have either just been completed or are in the process of development (e.g. postgraduate course). Trialling of some of the material has just gone through its first cohort of students. As such, there is little capacity at the present time to rapidly progress through the different NRAMP training levels and/or develop the NRAMP, further limited by the current educational provision in Guyana.

2.3.4 Networking

Rationale for networking as indicator for NRAMP adaptability

Networking, within the North Rupununi, Guyana and across the world, is vital for coping with and adapting to future changes that the NRAMP may face. Indicators in this area are difficult to quantify precisely yet are of crucial importance in exposing NRAMP champions to new ideas, finance and sources of motivation for promoting the NRAMP. The level of engagement in networks can be manifested in a wide range of ways: level of e-mail correspondences, level of intra-community/national/international visits and the level of external visitors coming to interact with NRAMP champions. This depends on the quality of information technology and physical network links, which in turn will determine the level of hospitality facilities available (e.g. accommodation and eating places).

Monitoring outcome for networking as indicator for NRAMP adaptability

NRAMP indicator – Although there is no recorded data for these indicators, through observation and anecdotal information, the NRAMP champions have access to the Internet, either in Georgetown, at the Bina Hill Institute, Rockview Lodge, Surama Village, Yupukari Village and at Karanambu, at least once a week if not more. Considering the difficulties in public transport provision, NRAMP champions still manage to maximise their mobility across communities and between the coast and the interior through various means and at high personal and institutional cost (in terms of time, money and physical discomfort/risk). In addition, a fair number of visitors including foreign NGO employees/volunteers and tourists, regularly visit Georgetown and the North Rupununi. To note that different locations receive significantly higher number

as a result of their facilities and location. For example, the proximity of the Bina Hill Institute to the regional administrative centre in Annai, the Lethem to Georgetown road, the only secondary school in the regional, Rockview Lodge (hosting international visitors) and the most frequently used landing strip, and its role as headquarters for the NRDDDB and regional training facility, makes it a key hub for visitors of all kinds. Due to the low quality of the transportation and communication infrastructure, the rainy season is a major factor that influences networking opportunities, disrupting both Internet connections and road transport links.

Environment indicator – Road networks within Guyana are limited and only partly paved - the main highways connect the towns along the coast, but there are few main roads going into the interior e.g. the Lethem to Georgetown Highway. In general, the state of the roads needs improvements, with many characterised by poor safety conditions and comprised of compacted earth which can become hazardous during the wet season. Public buses, although common on the coast, are only now providing more frequent services to the interior regions. For example, the bus company Intraserv, provides a service from Georgetown to Lethem (and then linking to Boa Vista in Brazil) which runs three to four times a week. However, the cost of this service is relatively high and the final section that would provide uninterrupted road link across to Brazil is still to be finalised in the form of the Takatu Bridge.

Barges and small boats carry people and agricultural products in the canals of the coastal estates and villages, and connect many villages in the interior, especially during the rainy season. However, motorised water surface transport in the North Rupununi is limited to small wooden or aluminium boats with outboard engines. These limited number of boats are mostly owned by community NGOs or foreign projects, and most community members are still dependent on walking, cycling, motorcycles or canoeing using dugouts.

Guyana Airways Corporation operates scheduled domestic and international flights. Timehri International Airport, established in 1968 and located 25 miles from Georgetown, is the country's main airport and is served by several international airlines. Domestic commercial and private aircraft, chiefly carrying passengers and equipment use landing strips, particularly in the interior regions. For example, in the North Rupununi, there is a flight connecting the region to Georgetown and Lethem everyday, and there are landing strips in Annai Central, Fairview Village (serving the Iwokrama Field Station) and at Karanambu Lodge.

Communication links throughout Guyana are also limited. Landline and mobile phone access is available along the coastal towns and in some interior towns, such as Lethem, but there is no availability within the vast interior. The same can be said for other forms of communication, such as postal services and the Internet. In the North Rupununi there is no grid electricity or telephone access (including mobile) and Section 2.1.3 outlines the on-line communication infrastructure currently available in the region. The local community radio station, Radio Paiwomak serves the region, but currently due to lack of funding, its broadcasts are limited and do not reach all communities. The region also has HF Radio (Freq 5300) which serves as the main communication between the different villages of the North Rupununi.

Evaluation outcome for networking as indicator for NRAMP adaptability

Evaluation indicator scores

Frequency of on-line access by Guyanese NRAMP champions = 2 (average once a week)

Frequency of visits outside normal working location by Guyanese NRAMP champions = 2 (average once a month)

Frequency of visits by non-locals to normal working location of Guyanese NRAMP champions = 2 (average once a month)

Information and communication infrastructure within Guyana = 1 (inadequate)

Evaluation summary

Considering the huge challenges in accessing the Internet as well as physical movement between locations, it is clear that NRAMP champions are taking every opportunity available to them to extend their networking links. The medium scores are therefore not a reflection of their efforts but an indication of the limitations imposed on them by the environmental circumstances. However, the region is experiencing rapid improvements in its road infrastructure with the Takatu Bridge in imminent completion and a new road to connect Rewa to the Georgetown-Lethem Road (paid for by a petroleum exploration company). The strategic significance of the Takatu Bridge connection cannot be underestimated as it opens up the landlocked northern Brazil to the Caribbean and North American markets. It is probable that this will generate major networking opportunities for the North Rupununi which is a key stop-off location along this link. The coastal regions have also experienced a significant improvement in information and communication services with the opening up of the mobile telephone market. Many developing countries have experienced rapid penetration of mobile telephone coverage into rural areas, but at present there is no clear indication whether this will happen in Guyana.

2.4 Ideal performance – is the NRAMP working well?

2.4.1 Building capacity of future generations

Rationale for building capacity of future generations as indicator for NRAMP ideal performance

For the NRAMP to work well in Guyana in the future, it is necessary to build the capacity of children in the areas of ecological sustainability and social justice. This relies on there being adequate numbers of educators to facilitate school learning. At the moment NRAMP facilitators are struggling to convey the meaning of NRAMP principles, process and methods, resulting from the limited exposure of the current population to issues such as social justice and ecological sustainability. Building capacity of future generations to engage with these issues would significantly improve the NRAMP's efficiency and effectiveness.

Monitoring outcome for building capacity of future generations as indicator for NRAMP ideal performance

NRAMP indicator – The Primary School Teacher and Student Pack is comprised of lesson plans and student activities for Grades 5 and 6 on four themes of wetlands, pollution, fire and biodiversity loss and extinction. These are freely available on the North Rupununi Community website (www.nrwetlands.org.gy) and 700 printed packs have been distributed to 350 primary schools across Guyana.

Up to April 2008, only teachers in the North Rupununi have been actively engaged in delivering the school material. A first trial of the material took place in October 2007 at Surama and Aranaputa Primary Schools.

Environment indicator – The current teacher training provision in Guyana is clearly inadequate. There are inadequate numbers of suitably qualified applicants applying to teacher training colleges and so they have had to lower their entry requirements for persons seeking to be trained as teachers. The high demand for graduates from these institutions has often permitted graduates to be recruited to teach at higher levels in the system than those for which they were trained^c. Even within the University of Guyana, student-teacher ratios are very high in some faculties, and not an insignificant number of teachers have inadequate qualifications and experience^c.

Even the percentage of teachers having received the available training provision is low, at only 57% in 2004^c. The persistent shortage of secondary school teachers has created a situation where about half of the secondary school teaching staff is employed on a part-time basis^e and without suitable qualifications. In

1999-2000, within Region 9 there were 142 trained primary school teachers within 42 schools (student: teacher ratio 26), of which only 33 were trained (student: teacher ratio 111)^d. In the same period, there were only 3 secondary schools with a total of 17 teachers (student: teacher ratio 14), of which only 9 were trained (student: teacher ratio 51)^d.

Evaluation outcome for building capacity of future generations as indicator for NRAMP ideal performance

Evaluation indicator scores

Proportion of teachers engaged in delivering NRAMP school packs = 1 (less than 50%)

Number of appropriately qualified teachers in Guyana i.e. have an undergraduate degree and have a postgraduate qualification in education = 1 (less than 50%)

Evaluation summary

The printing and distribution of the NRAMP school packs (funded by the British High Commission in Guyana) to all primary schools within Guyana will hopefully mean that in the near future there will be significant improvements in the proportion of teachers engaged in delivering learning based on NRAMP concepts and principles. However, the woefully low level of qualified teachers is of major concern. The latest data over 2002-2005 shows that the Guyanese government is investing 8.5% as a percentage of GDP and 14.5% as a percentage of total government expenditure on education^b. Yet, this is clearly still insufficient in significantly improving the quality of teaching in the country.

2.4.2 Increasing knowledge on social-ecological health

Rationale outcome for increasing knowledge on social-ecological health as indicator for NRAMP ideal performance

As the NRAMP has emphasised, decisions unsubstantiated with actual data can severely impact on the quality of the outcome. Ideally, stakeholders at all levels should be regularly monitoring both the social and ecological status of the situation in order to support the decision-making process. A broad strategy to data collection would allow unforeseen impacts to be detected early and responses to be put in place. However, this assumes that a broader culture of monitoring, incorporating aspects of sustainable development such as education and health, are also improving at regional and national level.

Monitoring outcome for increasing knowledge on social-ecological health as indicator for NRAMP ideal performance

NRAMP indicator – the State of the North Rupununi Report 2006 (available online at www.nrwetlands.org.gy) outlines the health of the sixteen communities and target wetland areas within the North Rupununi. The monitoring survey for this report was carried out for the period 2004 to 2006. The results of the monitoring indicated that the ecological functions of the North Rupununi wetlands were being performed in the manner in which would be expected for the different wetland types. The report also highlighted that the communities living in the North Rupununi were heavily reliant on natural resources for their livelihoods, against a background of limited health and education provision. In addition, the data suggests that there is significant potential for improving the livelihood support through, for example, ecotourism activities and wildlife harvesting, as both are still in their infancy within the North Rupununi.

The information put together in the State of the North Rupununi Report 2006 helped to develop more specific and relevant indicators using the viability approach for future monitoring and these can be found in the NRAMP 2008 (available online at www.nrwetlands.org.gy).

Environment indicator – The Guyana Bureau of Statistics provides on-line databases of social and economic information. Some of these data has contributed to international reports as demonstrated in Table 2.12. However, this table also shows that this institution does not collate all the data required for assessing sustainable development, especially in the area of ecological health.

Table 2.12 Sustainable development indicators for Guyana. Figures for Region 9 which includes the North Rupununi are given where possible.

| | |
|--|---|
| Human development index ^b | 0.682 to 0.75 from 1975 to 2005 (latest). Ranked 97 in the world and a middle-income country |
| Human poverty index ^b | Ranked 33 out of 108 developing countries in 2005 (latest) |
| Government of Guyana Living Conditions Index ^g | Region 9 is ranked 2 nd poorest out of the 10 regions of Guyana (2002) |
| Life expectancy at birth ^b | 65.2 years |
| Under five mortality rate (per 1000 live births) ^b | 63 (2005) |
| Proportion of population living below US\$1 per day ^c | 35% (1999) |

In terms of ecological health, the Ecological Footprint (EF) is a measure of the consumption of renewable natural resources by a human population. A country's EF is the total area of productive land or sea required to produce all the crops, meat, seafood, wood and fibre it consumes, to sustain its energy consumption, to give space for its infrastructure, and to absorb/metabolise its wastes. The EF can be compared with the biologically productive capacity of the land and sea available to that country's population. At present, there is no EF for Guyanaⁱ. The low population density of the country would imply a sustainable ecological footprint. However, increasing levels of natural resource extraction for export might be undermining the country's productive capacity of renewable resources.

Other sources of data for estimating the ecological health of the country include reports provided to various international conventions and agreements to which Guyana is signatory. These include the Framework Convention on Climate Change (1994), the Kyoto Protocol (2003), the Convention on Biological Diversity (1994), the Vienna Convention for the Protection of the Ozone Layer (1993), the Montreal Protocol (1993), the Convention of the Law of the Sea (1993), the Convention to Combat Desertification (1997), and the Convention on International Trade in Endangered Species (CITES) (1973). The government adopted its first National Biodiversity Action Plan (NBAP I) in 1999, which is the strategic framework for biodiversity management in Guyana and is currently in the process of adopting NBAP II. However, Guyana has not yet ratified the RAMSAR Convention on Wetlands.

An example of ecological data which could be sourced from international agreement reporting is the Millennium Development Goals. In particular, the report uses the proportion of land area covered by forest as an indicator of environmental sustainability. In 2005, this was estimated at 76.7%, corresponding to 163,777 sq km^e. The report also stated that the country's carbon dioxide emissions (per 1,000 pop) increased from 1.65 Gg in 1990 to 2.3 Gg in 2002^e.

Evaluation outcome for increasing knowledge on social-ecological health as indicator for NRAMP ideal performance

Evaluation indicator scores

Monitoring of: ecosystem and community viability in the North Rupununi = 1 (no monitoring occurring)

Availability and accessibility of regional and country level sustainable development indicators = 2 (adequate)

Evaluation summary

The State of the North Rupununi Report (2006) was entirely reliant on international donor support for data collection, analyses and dissemination. This is an area where a decrease in indicator score has occurred as, since 2006, there has been no provision for regular social and ecological monitoring in the North Rupununi. Also at national level, many data collection efforts are dependent on international funding although there is no guarantee that will continue indefinitely. However, even this data needs to incorporate ecological health indicators and needs to be integrated into a single point of public contact.

2.4.3 Motivation

Rationale for motivation as indicator for NRAMP ideal performance

Levels of motivation among NRAMP facilitators are crucial in sustaining NRAMP activities considering the extremely challenging working conditions. It is very difficult to monitor levels of motivation although qualitative surveys have been carried out occasional (e.g. grade of happiness while working on project from low to medium to high). Surrogate indicators, such as attendance at meetings and contribution to the development of the NRAMP, can be used. Levels of motivation within NRAMP facilitators are also determined by the national commitment to good governance. High levels of corruption, incompetence, bureaucratic inefficiencies, low quality of public services/infrastructure, to name a few governance problems, can significantly demoralise staff.

Monitoring outcome for motivation as indicator for NRAMP ideal performance

NRAMP indicator – Records from the minutes of internal NRAMP meetings, both in the face-to-face and on-line context, shows that on average nine out of ten (90%) NRAMP facilitators have been regularly attending meetings up to April 2008. Table 2.13 lists the individuals and the particular contributions they have made to the NRAMP development and other related activities.

Table 2.13 Contributors to the development of the NRAMP

| Name of NRAMP contributor | Contribution to the development of NRAMP |
|----------------------------------|---|
| Ms Indranee Roopsind | Sections of NRAMP Methodology, and complete development of Community Course materials |
| Mr Lakeram Haynes | Sections of NRAMP Context, and sections of Ranger/Environmental Officer materials |
| Ms Odacy Davis | Sections of NRAMP Context, and complete development of Ranger/Environmental Officer materials |
| Ms Vanda Allicock | Sections of NRAMP Context and Community Course materials |
| Mr Orville Davis | Sections of NRAMP Context, and complete development of Community Course materials |
| Mr Sean Mendonca | Sections of NRAMP Context, and complete development of Primary School Teacher and Student material |
| Ms Lilly Williams | Aiding in editing the NRAMP and development of the community website |
| Mr Jermaine Clark | Development of community tourist maps and the community website |
| Mr Calvin Bernard | Complete development of Postgraduate Course material |
| Dr Jay Mistry | Sections of NRAMP Context, Methodology and Implementation, sections of Postgraduate Course material, Ranger/Environmental Officer Course, and Primary School materials, and responsible for editing whole of the NRAMP. |
| Dr Andrea Berardi | NRAMP Introduction and Methodology, and sections of Postgraduate Course material. |
| Dr Matthew Simpson | Sections of NRAMP Introduction and Methodology, and Primary School material. |

Environment indicator – There are no set international indicators for social justice, but social justice can be divided into economic, cultural and political factors. For Guyana there is little data for economic and cultural factors. There is no information for income distribution^b, and although the percentage of the population living in extreme poverty had fallen from 29% to 19% from 1993 to 1999, the stagnation in the economy from 2000 is predicted to have worsened the poverty situation in Guyana^c. Gender equality in education is close to equal in primary, secondary and tertiary levels, although there has been a drop in the ratio of girls to boys in secondary and tertiary levels from 1996 to 2003^c. The share of women in waged employment in the non-agricultural sector has dropped from 38% in 1992 to 35% in 2002, although the proportion of seats held in parliament by women has increased from 18.5% in 1992 to 29% in 2006^c.

Data for good governance in Guyana is taken from the World Bank's Governance Matters 2007 Report^h and is shown from 1996 to 2006 in Table 2.14. This highlights that for all indicators, either there has been no real change from 1996 to 2006, or that the governance situation has actually worsened.

Table 2.14 Governance indicators for Guyana, 1996-2006 (taken from Governance Matters 2007^h)

| Governance Indicator | Year | Percentile Rank (0-100) | Governance Score (-2.5 to +2.5) | Standard Error |
|---------------------------------------|------|-------------------------|---------------------------------|----------------|
| Voice and Accountability ¹ | 2006 | 50.5 | 0.01 | 0.17 |
| | 2005 | 44.2 | -0.19 | 0.20 |
| | 2004 | 55.3 | 0.17 | 0.24 |
| | 2003 | 67.3 | 0.64 | 0.24 |
| | 2002 | 68.3 | 0.67 | 0.24 |
| | 2000 | 63.9 | 0.55 | 0.25 |
| | 1998 | 63.5 | 0.49 | 0.26 |
| | 1996 | 71.8 | 0.84 | 0.27 |
| Political Stability ² | 2006 | 26.9 | -0.59 | 0.25 |
| | 2005 | 38.5 | -0.23 | 0.28 |
| | 2004 | 36.1 | -0.29 | 0.30 |
| | 2003 | 34.6 | -0.32 | 0.32 |
| | 2002 | 29.3 | -0.55 | 0.38 |
| | 2000 | 26.9 | -0.56 | 0.38 |
| | 1998 | 44.2 | -0.04 | 0.31 |
| | 1996 | 43.8 | 0.01 | 0.45 |
| Government Effectiveness ³ | 2006 | 51.7 | -0.15 | 0.19 |
| | 2005 | 34.1 | -0.54 | 0.19 |
| | 2004 | 47.9 | -0.23 | 0.25 |
| | 2003 | 47.9 | -0.25 | 0.24 |
| | 2002 | 47.4 | -0.29 | 0.24 |
| | 2000 | 46.9 | -0.24 | 0.24 |
| | 1998 | 42.7 | -0.35 | 0.19 |
| | 1996 | 54.5 | -0.14 | 0.42 |
| Regulatory Quality ⁴ | 2006 | 32.2 | -0.48 | 0.20 |
| | 2005 | 40.0 | -0.39 | 0.22 |
| | 2004 | 45.9 | -0.25 | 0.23 |
| | 2003 | 44.9 | -0.23 | 0.23 |
| | 2002 | 36.6 | -0.43 | 0.26 |
| | 2000 | 44.4 | -0.17 | 0.30 |
| | 1998 | 51.7 | 0.17 | 0.48 |
| | 1996 | 56.1 | 0.24 | 0.47 |
| Rule of Law ⁵ | 2006 | 27.6 | -0.71 | 0.16 |
| | 2005 | 29 | -0.75 | 0.19 |
| | 2004 | 38.1 | -0.55 | 0.21 |
| | 2003 | 37.6 | -0.53 | 0.21 |
| | 2002 | 38.6 | -0.47 | 0.23 |
| | 2000 | 38.6 | -0.47 | 0.22 |
| | 1998 | 45.7 | -0.29 | 0.26 |
| | 1996 | 55.7 | 0.07 | 0.46 |
| Control of Corruption ⁶ | 2006 | 32.0 | -0.61 | 0.19 |
| | 2005 | 37.9 | -0.57 | 0.21 |
| | 2004 | 40.8 | -0.49 | 0.25 |
| | 2003 | 43.7 | -0.41 | 0.25 |
| | 2002 | 40.8 | -0.44 | 0.29 |
| | 2000 | 43.2 | -0.38 | 0.29 |
| | 1998 | 40.3 | -0.4 | 0.30 |
| | 1996 | 40.8 | -0.33 | 0.69 |

¹ Voice and accountability measures the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

² Political stability and absence of violence measures the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including domestic violence and terrorism.

³ Government effectiveness measures the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

⁴ Regulatory quality measures the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

⁵ Rule of law measures the extent to which agents have confidence in and abide by the rules of society, in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence.

⁶ Control of corruption measures the extent to which public power is exercised for private gain, including petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

Evaluation outcome for motivation as indicator for NRAMP existence

Evaluation indicator scores

Evidence of attendance at internal NRAMP meetings = 3 (greater than 80%)

Contribution to NRAMP development = 3 (greater than 80%)

Country level indicators of good governance with specific references to social justice and ecological sustainability = 1 (inadequate)

Evaluation summary

The internal development and support engendered by the NRAMP has been very high, notwithstanding the significant personal, institutional, logistical, infrastructural and environmental constraints. Staff contributions to NRAMP development have been excellent, with significant improvements in Guyanese staff participation. However, the situation with national governance can be considered to be very depressing. All the governance indicators (as well as anecdotal evidence) show deterioration in all aspects under the direct responsibility of government, from poverty levels to tackling corruption.

3. Evaluation and planning

3.1 Introduction and results

Using the NRAMP methodology to arrive at a simplified summary for each NRAMP viability category, each indicator was assigned a weighting according to its ranking. The ranking prioritised the most important indicators by assigning them a value, with '1' being the lowest weighting. Those indicators deemed to be of equal importance were assigned equal ranking. These rankings and scores were then used to calculate the overall index values for each viability category as outlined in Box 3.1. Tables 3.1 and 3.2 show the ranking and the scores for each indicator, and Table 3.3 provide the overall index values for each viability category. This is also shown graphically in Figures 3.1 and 3.2.

Box 3.1 Procedure for calculating final viability index values

First we need to look at the actual scores for each indicator and the ranking of the indicators within each health category. So, for example, for NRAMP flexibility, the average values for the four indicators and their ranking, in brackets, may be as follows:

Number of days off work of facilitators through illness e.g. malaria, or for other reasons e.g. family support = 2 (2)

Evidence of a range of disciplinary backgrounds and experiences within NRAMP facilitators = 2 (1)

Evidence of autonomy in decision-making by the NRAMP = 1 (2)

Evidence of critical thinking within NRAMP facilitators = 1 (2)

The new values for these indicators are found by multiplying the average indicator values by the weighting, as follows:

Number of days off work of facilitators through illness e.g. malaria, or for other reasons e.g. family support = 4

Evidence of a range of disciplinary backgrounds and experiences within NRAMP facilitators = 2

Evidence of autonomy in decision-making by the NRAMP = 2

Evidence of critical thinking within NRAMP facilitators = 2

In this report, all the indicators have a value from 1 to 3. If the values are added up, the maximum is 12 and the minimum 4. However, with the weights, these maximum and minimum values change, as follows:

Number of days off work of facilitators through illness e.g. malaria, or for other reasons e.g. family support = weight = 2, therefore min value is 2, max 6

Evidence of a range of disciplinary backgrounds and experiences within NRAMP facilitators = weight = 1, therefore min value is 1, max 3

Evidence of autonomy in decision-making by the NRAMP = weight = 2, therefore min value is 2, max 6

Evidence of critical thinking within NRAMP facilitators = weight = 2, therefore min value is 2, max 6

If we add up all the new minimum and maximum values, we get a minimum of 7 and a maximum of 21.

The following formula is then used for normalising the final values (i.e. fitting them between 0 and 1):

$(\text{total weighted indicator value} - \text{minimum weighted value}) / (\text{maximum weighted value} - \text{minimum weighted value})$

In this example, this would be:

$$(4+2+2+2 - 7) / (21 - 7) = 0.21$$

In other words, the health index for NRAMP flexibility is 0.21.

We would like to emphasize again here that this process is highly subjective and mechanisms need to be put in place to mitigate against individual bias. Ranking of indicators should ideally be carried out with as wider consultation as possible. For this report, the negotiation of ranking of indicators was limited to the NRAMP team.

Table 3.1 List of NRAMP indicators, their scores and ranking

| NRAMP indicators | Score | Ranking |
|---|--------------|----------------|
| Existence | | |
| <i>Human resources</i> | | |
| Critical mass of NRAMP trainees | 2 | 1 |
| Critical mass of Guyanese NRAMP facilitators | 2 | 2 |
| <i>Representation</i> | | |
| Representation of NRAMP champions within integrated conservation and development NGOs and governmental agencies in Guyana | 1 | 1 |
| Representation of key regional stakeholders at stakeholder meetings | 2 | 1 |
| Representation of key national stakeholders at stakeholder meetings | 2 | 1 |
| <i>Clear communication</i> | | |
| Evidence of appropriate information dissemination | 3 | 1 |
| Evidence of constructive engagement with regional NRAMP stakeholders | 1 | 1 |
| Evidence of constructive engagement with national NRAMP stakeholders | 2 | 1 |
| Evidence of constructive engagement with NRAMP communities | 2 | 1 |
| <i>Knowledge of the NRAMP</i> | | |
| Ability to articulate the context, principles, process and outputs of the NRAMP | 1 | 1 |
| Resistance | | |
| <i>Stable/regular support (funding, in-kind contributions)</i> | | |
| Amount of regular community generated income and/or in-kind contributions to support NRAMP and its champions | 1 | 3 |
| Amount of regular government/external funding and/or in-kind contributions available for the NRAMP and its champions | 1 | 2 |
| <i>Community access to land and natural resources in ways which can be sustainably managed</i> | | |
| Area of titled land in the North Rupununi | 2 | 4 |
| Area of state land secured for community use and/or biodiversity conservation in the North Rupununi | 1 | 3 |
| Ratification of RAMSAR Convention | 1 | 2 |
| Approval of Community Conservation Area/Concessions | 1 | 2 |
| <i>Institutional/policy integration</i> | | |

| | | |
|--|---|---|
| Evidence of integration of the NRAMP into ‘institutional’ frameworks | 2 | 1 |
| Evidence of direct reference to NRAMP within policies | 1 | 1 |
| Flexibility | | |
| <i>Capacity and diversity</i> | | |
| Number of days off work of facilitators through illness e.g. malaria, or for other reasons e.g. family support | 2 | 2 |
| Evidence of a range of disciplinary backgrounds and experiences within NRAMP facilitators | 2 | 1 |
| <i>Autonomy</i> | | |
| Evidence of autonomy in decision-making by the NRAMP | 1 | 2 |
| Evidence of critical thinking within NRAMP facilitators | 1 | 2 |
| Adaptability | | |
| <i>Ability to use the learning cycle to evaluate and change NRAMP goals, principles, process and methods</i> | | |
| Evidence of community use of the learning cycle to evaluate and change NRAMP goals, principles, process and methods | 2 | 2 |
| Evidence of national level stakeholder use of the learning cycle to evaluate and change NRAMP goals, principles, process and methods | 1 | 2 |
| <i>Education and training</i> | | |
| Number of people passing through the different levels of NRAMP training and educational courses from basic knowledge to critical awareness | 1 | 3 |
| <i>Networking</i> | | |
| Frequency of on-line access by Guyanese NRAMP champions | 2 | 1 |
| Frequency of visits outside normal working location by Guyanese NRAMP champions | 2 | 2 |
| Frequency of visits by non-locals to normal working location of Guyanese NRAMP champions | 2 | 2 |
| Ideal Performance | | |
| <i>Build capacity of future generations for sustainable livelihoods and natural resource management</i> | | |
| Proportion of teachers engaged in delivering NRAMP school packs | 1 | 1 |
| <i>Increasing knowledge on social-ecological health</i> | | |
| Monitoring of: ecosystem and community viability in the North Rupununi | 1 | 1 |
| <i>Motivation</i> | | |
| Evidence of attendance at internal NRAMP meetings | 3 | 1 |
| Contribution to NRAMP development | 3 | 1 |

Table 3.2 List of Environment indicators, their scores and ranking

| Environment indicators | Score | Ranking |
|--|-------|---------|
| Existence | | |
| <i>Human resources</i> | | |
| Number of knowledgeable and skilled individuals potentially available | 1 | 3 |
| Number of people with facilitating skills in the area of natural resource management/sustainable livelihoods within Guyana | 1 | 4 |
| <i>Support</i> | | |
| Number and capacity of NGOs and governmental agencies supporting integrated conservation and development in Guyana | 1 | 3 |
| <i>Sharing of information</i> | | |
| Access to on-line communication infrastructure | 1 | 1 |
| Number of media outlets reporting on conservation and development issues | 1 | 1 |
| <i>General awareness of ecological sustainability and social justice issues</i> | | |
| Relevant topics covered in national school curricula | 1 | 2 |
| Number of university graduates in relevant disciplines | 1 | 2 |
| Membership of local, national and international integrated conservation and development NGOs | 1 | 2 |
| Resistance | | |
| <i>Socio-economic climate</i> | | |
| Evidence of increasing community viability | 1 | 3 |
| Evidence of availability of funding for biodiversity conservation and sustainable development from personal, national and international donors | 1 | 2 |
| <i>National commitment to sustainable natural resource management and biodiversity conservation</i> | | |
| Area of land dedicated to sustainable natural resource management and biodiversity conservation | 1 | 4 |
| <i>Compatibility of the NRAMP with other regional management plans and national level policies and regulations</i> | | |
| Evidence of implications of other regional management plans and national level policies and regulations on the NRAMP | 1 | 1 |
| <i>Flexibility</i> | | |
| <i>Healthy physical and emotional lifestyles</i> | | |
| Level of risk factors e.g. healthy eating, malaria avoidance, physical fitness etc. | 1 | 2 |
| <i>Education and training</i> | | |
| Number and accessibility of different training and education courses available at local, regional and national level | 1 | 1 |

| | | |
|---|---|---|
| <i>Freedom of speech</i> | | |
| Voice and accountability | 1 | 2 |
| Adaptability | | |
| <i>Democratic change</i> | | |
| Impact and influence of grassroots political and social movements in Guyana | 2 | 2 |
| <i>Education and training</i> | | |
| Number of knowledgeable and skilled individuals potentially available | 1 | 3 |
| Number of lecturers with skills/knowledge for engagement at postgraduate level in the area of natural resource management/sustainable livelihoods within Guyana | 1 | 3 |
| <i>Physical networks</i> | | |
| Information and communication infrastructure within Guyana | 1 | 1 |
| Ideal Performance | | |
| <i>Capacity of educators</i> | | |
| Number of appropriately qualified teachers in Guyana i.e. have an undergraduate degree and have a postgraduate qualification in education | 1 | 1 |
| <i>Availability of regional and national social and ecological health data</i> | | |
| Availability and accessibility of regional and country level sustainable development indicators | 2 | 1 |
| <i>Assessment of quality of national governance</i> | | |
| Country level indicators of good governance with specific references to social justice and ecological sustainability | 1 | 1 |

Table 3.3 Index values for each viability category for NRAMP and Environment Indicators

| | |
|-------------------------------|------|
| <u>NRAMP Indicators</u> | |
| Existence | 0.41 |
| Resistance | 0.14 |
| Flexibility | 0.21 |
| Adaptability | 0.29 |
| Ideal Performance | 0.50 |
| <u>Environment Indicators</u> | |
| Existence | 0.00 |
| Resistance | 0.00 |
| Flexibility | 0.00 |
| Adaptability | 0.19 |
| Ideal Performance | 0.17 |

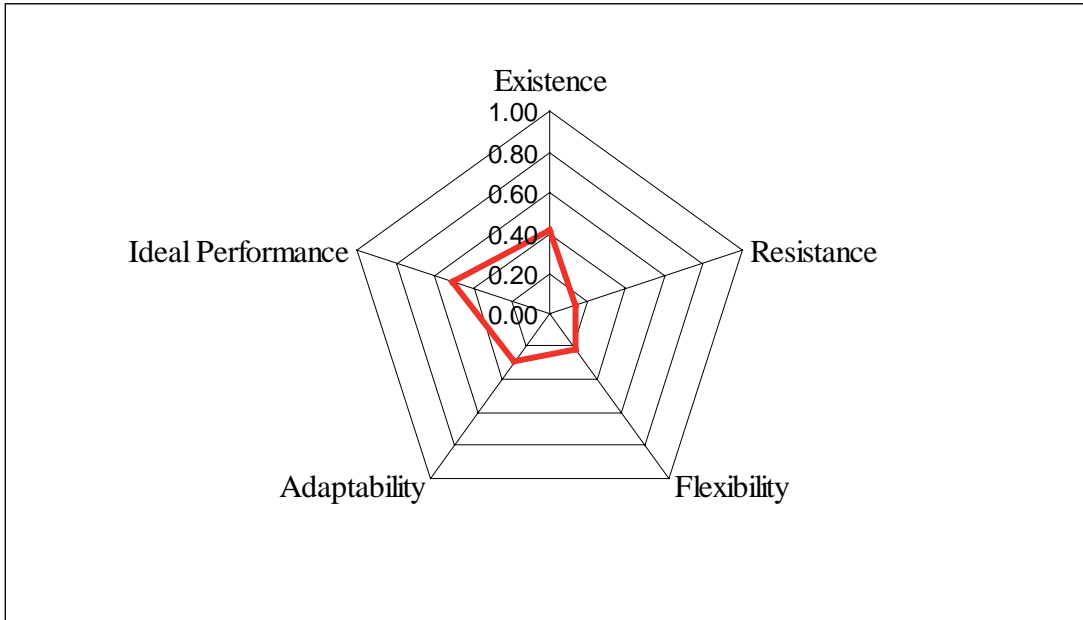


Figure 3.1 Star diagram showing results for NRAMP Indicators

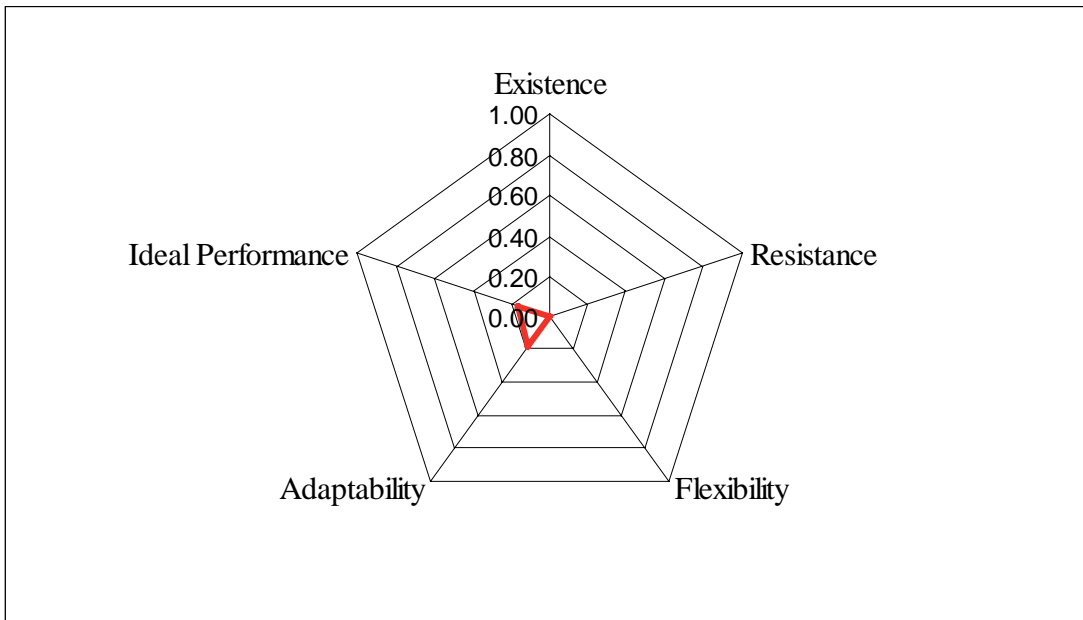


Figure 3.1 Star diagram showing results for Environment Indicators

3.2 Discussion and recommendations

According to our priorities for working through the indicator categories, in order of importance we will be looking at Existence, Resistance, Flexibility, Adaptability and Ideal Performance.

3.2.1 Existence

It is interesting to compare the priorities demanded by the official project proposal e.g. producing training material, and the priorities identified by the ranking of indicators exercise. This shows that significantly more emphasis should have been given to developing a critical mass of NRAMP facilitators. Although we have an adequate score for the number of trainees who have completed the Community and Ranger/Environmental Officer courses, this does not automatically imply that these individuals can become NRAMP facilitators. Having undertaken the course once is not sufficient to develop the necessary skills for facilitating others. These trainees need to have the opportunity to practice NRAMP processes and techniques first, before they can then train others. However, because of the project's limited time span we were forced to first concentrate on developing the training material, and so were restricted in the amount of time to observe the impact of training in order to identify new facilitators. This has also had knock-on effects on the diffusion of NRAMP champions within integrated conservation and development NGOs and representation of a wide number of stakeholders in the NRAMP.

The low levels of education within the country have made the task of training and promoting NRAMP champions extremely challenging. The limited number and strength of integrated conservation and development NGOs significantly reduces the opportunities for individuals to develop skills and experience. This is compounded by the low quality of information and communication, both in terms of access and raising awareness with regards to environment and development issues.

Recommendations for action are as follows:

- 1) Use existing training material to build capacity in more individuals for NRAMP facilitation and championing.
- 2) Engage with a wider range of integrated conservation and development NGOs and government agencies through a wider dissemination strategy e.g. through the media, organising conferences and workshops, meetings between NRAMP champions and wider stakeholders.

3.2.2 Resistance

Our analysis shows that resistance, i.e. the ability of the NRAMP to withstand external pressures, has by the far the lowest score out of all the viability categories. The NRAMP principles clearly focus on grassroots bottom-up participation of communities. This participation is currently being undermined by the limited decision-making controls conferred to these communities by the national government. In fact, the latest developments e.g. the PRMU, further entrench central government power and bureaucratic control. As a start, communities need titled control over traditional land use areas, which at the moment is limited to the immediate vicinities of their settlements. Their desperate socio-economic situation also restricts their support for activities which are not directly related to fulfilling their immediate survival. This position weakens the confidence of communities to internally support natural resource management initiatives, such as the NRAMP, which require long-term commitments for long-term benefits.

Worldwide, Guyana has one of the lowest proportions of its land dedicated to protecting its natural resources either through traditional management by indigenous communities or through national parks and conservation areas. Most of the land areas that are indeed dedicated to integrated development and conservation, e.g. Iwokrama and Conservation International's Upper Essequibo concession, are almost entirely dependent on international funding. Unfortunately, increasing competition from other global priorities has meant that this international funding has seen a marked reduction in the last decade.

Recommendations for action are as follows:

- 1) Promote local community management of natural resources, prioritising community land titling of land, followed by the protection of community natural resources from external exploitation through mechanisms such as the RAMSAR Convention.

3.2.3 Flexibility

Yet again, indicator scores are limited by the capacity of NRAMP team members. In this case, it is the ability to critically reflect on the NRAMP approach and provide constructive ways forwards in what are clearly extremely difficult working and living conditions. "Critical reflection" does not equate to "having a good moan" and/or complaining about another individual -- this is easy to do and it is all too often a frequent pastime in such circumstances. Good critical reflection is about identifying bottlenecks and weaknesses in current procedures, and putting into action, in a timely way, modifications in behaviour to circumvent the problems. Unfortunately, historical approaches to education, especially in colonial settings, have encouraged a certain level of "learned helplessness" i.e. rigid dependence on hierarchical top-down management to provide the solution. The usual reaction to disagreements with line managers in this historical relationship is to disrupt working activities without actually proposing and enacting better alternatives. The overall health status of NRAMP facilitators was also a major concern. Most of the illnesses result from endemic diseases in Guyana, such as malaria. But a few were a direct result of dangerous practices which are also a common feature of low levels of health and safety education.

The situation is mirrored within the wider Guyanese context, where the overall capacity of the population to engage in critique of the established order and put into place better alternatives has been actively suppressed, first by the colonial powers, then by dictatorship, and most recently, a focus on race politics to the exclusion of all other civic priorities. Improvements in the overall health status of the Guyanese population is also extremely low, both as a direct result of the poor provision of health care, and indirectly, from unhealthy and dangerous practices not discouraged by the educational system.

Recommendations for action are as follows:

- 1) To date, NRAMP has mainly focused on managing problematic natural resource issues. However, it would be appropriate to expand the capacity building aspect to promote critical reflection skills and personal health care.

3.2.4 Adaptability

The three levels of NRAMP capacity building – community, ranger/environmental officer, and postgraduate courses - are intended to increasingly discourage individuals to implement NRAMP in a less rigid way, and instead empower facilitators and champions to adapt the process to better reflect the changing local circumstances. Thus, adaptability within NRAMP is highly dependent on individuals passing through all three stages of training. Because of the short term nature of the current project, individuals have only been able to engage with one of the first two stages of training. No individuals have been able to participate in the third stage as yet, due to the delay in implementing the postgraduate course. However, even the

most basic understanding of the NRAMP encourages individuals to consider adaptability through the explicit reference to the four stages of the learning cycle: observation; evaluation; planning; and acting. Thus, another significant indicator of adaptability requires an investigation into whether this learning cycle has been adopted in processes by the wider stakeholder community. Although there is some evidence that stakeholders are now familiar with the four terms of the learning cycle, it is difficult to see this understanding translated into an in-depth application of the practical techniques illustrated in the NRAMP. Diffusion of this approach is highly dependent on the level of interaction and networking by NRAMP facilitators with the wider stakeholding community, through means such as online and/or face-to-face communication. The level of activity in this area has been adequate and it would be good to sustain and improve on these levels of networking.

Unfortunately, there is very little capacity within Guyana to deliver this kind of training through state funded educational institutions. However, grassroots movements are becoming increasingly active in this area. Internet access on the coast is also slowly improving, although provision to the interior is expensive and of low quality.

Recommendations for action are as follows:

- 1) The development and implementation of the third level of NRAMP training should be delivered as a matter of urgency.
- 2) Levels of networking with stakeholders should be sustained.

3.2.5 Ideal Performance

The level of participation within internal NRAMP meetings has been good principally thanks to several highly motivated and determined individuals. However, the score on this particular indicator may be overly optimistic, since meetings in Guyana have regularly suffered from the lack of attendance of senior in-country managers. Contribution to NRAMP documentation has been adequate, although the relatively low capacity of most individuals has meant that progress has been slow and the quality of outputs could have been better. Engagement with the wider educational system to build capacity for future implementation and development of the NRAMP has been limited, but recent developments show that there is the potential for great improvement in this area. Opportunities to sustain the level of data collection for regular monitoring should be sought in order to improve the quality of decision-making within the NRAMP. However, it is difficult to envisage how this could be promoted in the absence of external funding and/or community support.

In the wider context, the quality and reach of teacher training is a major concern. It is clear that the Guyanese government is continually undermining the future of the country by the relatively low levels of investment in this crucial area. Although there is an established centre for national and regional data collection, its coverage is still not comprehensive, especially in the area of ecological sustainability.

Recommendations for action are as follows:

- 1) NRAMP facilitators and champions should not treat the current documentation as static artefacts, but should be encouraged to review, update and improve the written documentation at least on a yearly basis.
- 2) NRAMP facilitators and champions should encourage communities and wider stakeholders to continue monitoring the social and ecological status of the North Rupununi region, through for example, the adoption of the NRAMP community and ecological health indicators within various projects and initiatives.

3.3 Conclusion

It is clear that the short-term nature of funding to support the NRAMP development and implementation is a major impediment to sustain its acceptance in what can be realistically described as extremely difficult circumstances. However, the commitment and determination of a core group of NRAMP champions could potentially maintain the process alive through the current phase of limited support. The above recommendations have been developed with this in mind, proposing a minimal set of practical objectives which could be realistically achieved in the near future.

Appendix

Table A. Indicators for NRAMP Existence

| NRAMP indicators | Measurable indicators over which NRAMP has direct influence | Technique for measuring direct indicators | Thresholds for evaluation (outcome highlighted in bold) | Environment indicators | Measurable indicators over which NRAMP has indirect influence | Technique for measuring indirect indicators | Thresholds for evaluation (outcome highlighted in bold) |
|------------------|---|---|---|------------------------|--|--|---|
| Human resources | Critical mass of NRAMP trainees | Completion records for NRAMP training courses | 1 = less than 50 2 = 50-100 3 = greater than 100 | Human resources | Number of knowledgeable and skilled individuals potentially available | Collection of secondary school and relevant university course results Review of education status in Guyana | 1 = low capacity 2 = reasonable capacity 3 = good capacity |
| | Critical mass of Guyanese NRAMP facilitators | Record number of NRAMP facilitators | 1 = less than 5 2 = between 5 and 10 3 = greater than 10 | | Number of people with facilitating skills in the area of natural resource management/sustainable livelihoods within Guyana | List of Guyanese facilitators (names, organisation they work for, official training received and/or years of experience) | 1 = less than 50 2 = between 50 and 100 3 = greater than 100 |
| Representation | Representation of NRAMP champions within integrated conservation and development NGOs and governmental agencies in Guyana | Record NRAMP champion representation from integrated conservation and development NGOs and governmental agencies in Guyana, with associated qualitative information on support, and compare to list of key organisations working in field | 1 = less than 50% 2 = between 50 to 80% 3 = greater than 80% | Support | Number and capacity of NGOs and governmental agencies supporting integrated conservation and development in Guyana | List name of organisation/project, number of employees, total yearly funding, total capital assets | 1 = inadequate 2 = adequate 3 = excellent |

| NRAMP indicators | Measurable indicators over which NRAM has direct influence | Technique for measuring direct indicators | Thresholds for evaluation (outcome highlighted in bold) | Human resources | Measurable indicators over which NRAM has indirect influence | Technique for measuring indirect indicators | Thresholds for evaluation (outcome highlighted in bold) |
|------------------|--|--|---|-----------------|--|--|--|
| Human resources | Critical mass of NRAM trainees | Completion records for NRAM training courses | 1 = less than 50 2 = 50-100 3 = greater than 100 | Human resources | Number of knowledgeable and skilled individuals potentially available | Collection of secondary school and relevant university course results Review of education status in Guyana | 1 = low capacity 2 = reasonable capacity 3 = good capacity 1 = less than 50 |
| | Critical mass of Guyanese NRAM facilitators | Record number of NRAM facilitators | 1 = less than 5 2 = between 5 and 10 3 = greater than 10 | | Number of people with facilitating skills in the area of natural resource management/sustainable livelihoods within Guyana | List of Guyanese facilitators (names, organisation they work for, official training received and/or years of experience) | 2 = between 50 and 100 3 = greater than 100 |
| Representation | Representation of NRAM champions within integrated conservation and development NGOs and governmental agencies in Guyana | Record NRAM champion representation from integrated conservation and development NGOs and governmental agencies in Guyana, with associated qualitative information on support, and compare to list of key organisations working in field | 1 = less than 50% 2 = between 50 to 80% 3 = greater than 80% | Support | Number and capacity of NGOs and governmental agencies supporting integrated conservation and development in Guyana | List name of organisation/project, number of employees, total yearly funding, total capital assets | 1 = inadequate 2 = adequate 3 = excellent |

| | | | | | | | | |
|---------------------|--|---|--|------------------------|--|--|---|--|
| | Representation of key regional stakeholders at stakeholder meetings | Record regional stakeholder representation at Stakeholder Forum and compare to list of key stakeholders | <p>1 = average less than 50%</p> <p>2 = average between 50 to 80%</p> <p>3 = average greater than 80%</p> | | | | | |
| | Representation of key national stakeholders at stakeholder meetings | Record national stakeholder representation at Stakeholder Forum and compare to list of key stakeholders | <p>1 = average less than 50%</p> <p>2 = average between 50 to 80%</p> <p>3 = average greater than 80%</p> | | | | | |
| Clear communication | Evidence of appropriate information dissemination | Availability of NRAMP material on-line and in print | <p>1 = inadequate</p> <p>2 = adequate</p> <p>3 = excellent</p> | Sharing of information | Access to on-line communication infrastructure | Number and quality of on-line access points within Guyana | <p>1 = inadequate</p> <p>2 = adequate</p> <p>3 = excellent</p> | |
| | Evidence of constructive engagement with regional NRAMP stakeholders | Number of regional Stakeholder Forums | <p>1 = less than 2 per year</p> <p>2 = 2-3 per year</p> <p>3 = 4 or more per year</p> | | Number of media outlets reporting on conservation and development issues | Evidence of conservation and development reporting e.g. newspaper articles, TV discussions/news items (name of media outlet, how often, length/time, issues) | <p>1 = inadequate</p> <p>2 = adequate</p> <p>3 = excellent</p> | |

| | | | | | | | |
|------------------------|---|---|---|---------------------------------|--|---|--|
| | Evidence of constructive engagement with national NRAMP stakeholders | Number of national Stakeholder Forums | 1 = less than 2 per year 2 = 2-3 per year 3 = 4 or more per year | | | | |
| | Evidence of constructive engagement with NRAMP communities | Average number of visits per community | 1 = less than 2 per year 2 = 2-3 per year 3 = 4 or more per year | | | | |
| Knowledge of the NRAMP | Ability to articulate the context, principles, process and outputs of the NRAMP | Interviews and/or questionnaires with stakeholders and video interviews on articulating NRAMP | 1 = inadequate 2 = adequate 3 = excellent | General awareness of ecological | Relevant topics covered in national school curricula | Review of primary and secondary school curriculum | 1 = inadequate 2 = adequate 3 = excellent |
| | | | | | Number of university graduates in relevant disciplines | Number of students on relevant university degrees | 1 = inadequate 2 = adequate 3 = excellent |
| | | | | | Membership of local, national and international integrated conservation and development NGOs | List organisations and their membership numbers | 1 = inadequate 2 = adequate 3 = excellent |

Table B. Indicators for NRAMP Resistance

| NRAMP indicators | Measurable indicators over which NRAMP has direct influence | Technique for measuring direct indicators | Thresholds for evaluation | Environment indicators | Measurable indicators over which NRAMP has indirect influence | Technique for measuring indirect indicators | Thresholds for evaluation |
|---|--|--|---|--|--|--|--|
| Stable/regular support (funding, in-kind contributions) | Amount of regular community generated income and/or in-kind contributions to support NRAMP and its champions | Record amount of regular income and/or in-kind contributions | <p>1 = inadequate 2 = adequate 3 = excellent</p> | Socio-economic climate | Evidence of increasing community viability | Yearly survey of households viability | <p>1 = inadequate 2 = adequate 3 = excellent</p> |
| Community access to land and natural resources in ways which can be sustainably managed | Amount of regular government/external funding and/or in-kind contributions available for the NRAMP and its champions | Record amount of regular income and/or in-kind contributions | <p>1 = inadequate 2 = adequate 3 = excellent</p> | | Evidence of availability of funding for biodiversity conservation and sustainable development from personal, national and international donors | Review yearly amount of funding received by Guyana for biodiversity conservation and natural resource management | <p>1 = inadequate 2 = adequate 3 = excellent</p> |
| | Area of titled land in the North Rupununi | Record of titled land in the North Rupununi | <p>1 = majority of communities have no land rights 2 = majority of communities have land rights restricted to area of habitation and its immediate surroundings 3 = majority of communities have land rights extending to most traditional use areas</p> | National commitment to sustainable natural resource management and biodiversity conservation | Area of land dedicated to sustainable natural resource management and biodiversity conservation | Record of national parks, biosphere reserves and other protected areas | <p>1 = below regional/international average 2 = equivalent to regional/international average 3 = above regional/international average</p> |
| | Area of state land secured for community use and/or biodiversity conservation in the North Rupununi | Record of state land for community use and/or biodiversity conservation i.e. land not used for purposes that exclude communities | <p>1 = low proportion of traditional use areas (less than 33% of area) 2 = medium proportion of traditional use areas (33-66% of area) 3 = high proportion of traditional use areas (greater than 66% of area)</p> | | | | |

| | | | | | | | |
|------------------------------------|--|--|---|--|---|--|--|
| | Ratification of RAMSAR Convention | Record of progress towards RAMSAR convention ratification by Guyana government | <p>1 = limited evidence of progress</p> <p>2 = RAMSAR proposal ratified by Guyanese government</p> <p>3 = RAMSAR designation achieved</p> <p>1 = limited evidence of progress</p> <p>2 = proposals approved by Guyanese government</p> <p>3 = conservation status achieved</p> <p>1 = no use of NRAMP processes and materials</p> <p>2 = intended use of NRAMP processes and materials</p> <p>3 = active use of NRAMP processes and materials</p> <p>1 = no or little reference to NRAMP principles and processes</p> <p>2 = some reference to NRAMP principles and processes</p> <p>3 = widespread reference to NRAMP principles and processes</p> | <p>Compatibility of the NRAMP with other regional management plans and national level policies and regulations</p> | <p>Evidence of implications of other regional management plans and national level policies and regulations on the NRAMP</p> | <p>Review of all regional management plans and national level policies and regulations</p> | <p>1 = in conflict and/or incompatible</p> <p>2 = some compatibility</p> <p>3 = highly compatible</p> |
| 'Institutional'/policy integration | Approval of Community Conservation Area/ Concessions | Record of progress towards Community Conservation Areas/ Concessions | <p>1 = limited evidence of progress</p> <p>2 = proposals approved by Guyanese government</p> <p>3 = conservation status achieved</p> <p>1 = no use of NRAMP processes and materials</p> <p>2 = intended use of NRAMP processes and materials</p> <p>3 = active use of NRAMP processes and materials</p> <p>1 = no or little reference to NRAMP principles and processes</p> <p>2 = some reference to NRAMP principles and processes</p> <p>3 = widespread reference to NRAMP principles and processes</p> | <p>Compatibility of the NRAMP with other regional management plans and national level policies and regulations</p> | <p>Evidence of implications of other regional management plans and national level policies and regulations on the NRAMP</p> | <p>Review of all regional management plans and national level policies and regulations</p> | <p>1 = in conflict and/or incompatible</p> <p>2 = some compatibility</p> <p>3 = highly compatible</p> |
| | Evidence of integration of the NRAMP into 'institutional' frameworks | Record of use of NRAMP processes and training materials within institution deliberations and capacity building | <p>1 = limited evidence of progress</p> <p>2 = proposals approved by Guyanese government</p> <p>3 = conservation status achieved</p> <p>1 = no use of NRAMP processes and materials</p> <p>2 = intended use of NRAMP processes and materials</p> <p>3 = active use of NRAMP processes and materials</p> <p>1 = no or little reference to NRAMP principles and processes</p> <p>2 = some reference to NRAMP principles and processes</p> <p>3 = widespread reference to NRAMP principles and processes</p> | <p>Compatibility of the NRAMP with other regional management plans and national level policies and regulations</p> | <p>Evidence of implications of other regional management plans and national level policies and regulations on the NRAMP</p> | <p>Review of all regional management plans and national level policies and regulations</p> | <p>1 = in conflict and/or incompatible</p> <p>2 = some compatibility</p> <p>3 = highly compatible</p> |
| | Evidence of direct reference to NRAMP within policies | Record of reference to NRAMP within local, regional and national policies | <p>1 = limited evidence of progress</p> <p>2 = proposals approved by Guyanese government</p> <p>3 = conservation status achieved</p> <p>1 = no use of NRAMP processes and materials</p> <p>2 = intended use of NRAMP processes and materials</p> <p>3 = active use of NRAMP processes and materials</p> <p>1 = no or little reference to NRAMP principles and processes</p> <p>2 = some reference to NRAMP principles and processes</p> <p>3 = widespread reference to NRAMP principles and processes</p> | <p>Compatibility of the NRAMP with other regional management plans and national level policies and regulations</p> | <p>Evidence of implications of other regional management plans and national level policies and regulations on the NRAMP</p> | <p>Review of all regional management plans and national level policies and regulations</p> | <p>1 = in conflict and/or incompatible</p> <p>2 = some compatibility</p> <p>3 = highly compatible</p> |

Table C. Indicators for NRAMP Flexibility

| NRAMP indicators | Measurable indicators over which NRAMP has direct influence | Technique for measuring direct indicators | Thresholds for evaluation | Environment indicators | Measurable indicators over which NRAMP has indirect influence | Technique for measuring indirect indicators | Thresholds for evaluation |
|------------------------|--|--|--|---|--|---|--|
| Capacity and diversity | Number of days off work of facilitators through illness e.g. malaria, or for other reasons e.g. family support | Record of days off work per month of NRAMP facilitators | 1 = greater than 20% of working days off 2 = between 5-20% of working days off 3 = less than 5% of working days off | Healthy physical and emotional lifestyles | Level of risk factors e.g. healthy eating, malaria avoidance, physical fitness etc. | Record of health risk factors in Guyana | 1 = high risks to health 2 = moderate risks to health 3 = low risks to health |
| | Evidence of a range of disciplinary backgrounds and experiences within NRAMP facilitators | Record of CVs for all facilitators | 1 = low diversity of skills and experiences 2 = adequate diversity of skills and experiences 3 = high diversity of skills and experiences | Education and training | Number and accessibility of different training and education courses available at local, regional and national level | Review of institutional education and training provision within Guyana | 1 = inadequate 2 = adequate 3 = excellent |
| Autonomy | Evidence of autonomy in decision-making by the NRAMP | Record of new initiatives developed and led by Guyanese NRAMP facilitators | 1 = low levels 2 = medium levels 3 = high levels | Freedom of speech | Voice and accountability | Review literature and data for country level indicators of voice and accountability | 1 = inadequate 2 = adequate 3 = excellent |
| | Evidence of critical thinking within NRAMP facilitators | Record of critical feedback to NRAMP development by Guyanese facilitators | 1 = low levels 2 = medium levels 3 = high levels | | | | |

Table D. Indicators for NRAM Adaptability

| NRAMP indicators | Measurable indicators over which NRAM has direct influence | Technique for measuring direct indicators | Thresholds for evaluation | Environment indicators | Measurable indicators over which NRAM has indirect influence | Technique for measuring indirect indicators | Thresholds for evaluation |
|--|---|---|--|------------------------|---|---|--|
| Ability to use the learning cycle to evaluate and change NRAM goals, principles, process and methods | Evidence of community use of the learning cycle to evaluate and change NRAM goals, principles, process and methods | Record of community use of the learning cycle to evaluate and change NRAM goals, principles, process and methods | 1 = no change to NRAM goals, principles, process and/or methods 2 = some change of NRAM goals, principles, process and/or methods 3 = new NRAM goals, principles, process and/or methods proposed 1 = no change to NRAM goals, principles, process and methods 2 = some change of NRAM goals, principles, process and methods 3 = new NRAM goals, principles, process and/or methods proposed | Democratic change | Impact and influence of grassroots political and social movements in Guyana | Survey through literature and interviews of current grassroots political and social movements | 1 = low impact 2 = moderate impact 3 = high impact |
| Education and training | Evidence of national level stakeholder use of the learning cycle to evaluate and change NRAM goals, principles, process and methods | Record of national level stakeholder use of the learning cycle to evaluate and change NRAM goals, principles, process and methods | 1 = less than 50% 2 = between 50 to 80% 3 = greater than 80% | Education and training | Number of knowledgeable and skilled individuals potentially available | Collection of secondary school and relevant university course results | 1 = low capacity 2 = reasonable capacity 3 = good capacity |

| | | | | | | | |
|--|--|--|---|-------------------|---|---|---|
| | Networking | Frequency of on-line access by Guyanese NRAMP champions | Record through interviews, how often NRAMP champions use the Internet | | Number of lecturers with skills/knowledge for engagement at postgraduate level in the area of natural resource management/sustainable livelihoods within Guyana | List of Guyanese lecturers (names, organisation they work for, official training received and/or years of experience) | 1 = low capacity 2 = reasonable capacity 3 = good capacity |
| | Frequency of visits outside normal working location by Guyanese NRAMP champions | Record through interviews, how often NRAMP champions travel away from normal place of work | 1 = less than once a week 2 = average once a week 3 = average more than once a week | Physical networks | Information and communication infrastructure within Guyana | Record presence and quality of transportation and telecommunication links in Guyana | 1 = inadequate 2 = adequate 3 = excellent |
| | Frequency of visits by non-locals to normal working location of Guyanese NRAMP champions | Record through interviews, how often non-locals visit working location of NRAMP champions | 1 = less than once a month 2 = average once a month 3 = average more than once a month | | | | |

Table E. Indicators for NRAMP Ideal Performance

| NRAMP indicators | Measurable indicators over which NRAMP has direct influence | Technique for measuring direct indicators | Thresholds for evaluation | Environment indicators | Measurable indicators over which NRAMP has indirect influence | Technique for measuring indirect indicators | Thresholds for evaluation |
|--|--|--|--|---|---|---|--|
| Build capacity of future generations for sustainable livelihoods and natural resource management | Proportion of teachers engaged in delivering NRAMP school packs | Record numbers of teachers using NRAMP school packs throughout Guyana | <p>1 = less than 50%</p> <p>2 = between 50 to 80%</p> <p>3 = greater than 80%</p> | Capacity of educators | Number of appropriately qualified teachers in Guyana i.e. have an undergraduate degree and have a postgraduate qualification in education | Data from government reports | <p>1 = less than 50%</p> <p>2 = between 50 to 80%</p> <p>3 = greater than 80%</p> |
| Increasing knowledge on social-ecological health | Monitoring of: ecosystem and community viability in the North Rupununi | Yearly community questionnaire within communities using NRAMP Regular wetland monitoring of NRAMP target areas | <p>1 = no monitoring occurring</p> <p>2 = ad-hoc monitoring</p> <p>3 = regular monitoring, at least on a yearly basis</p> | Availability of regional and national social and ecological health data | Availability and accessibility of regional and country level sustainable development indicators | Review of existing data sources on regional and country level sustainable development indicators | <p>1 = inadequate</p> <p>2 = adequate</p> <p>3 = excellent</p> |
| Motivation | Evidence of attendance at internal NRAMP meetings | Record number of participants in face-to-face or on-line meetings | <p>1 = less than 50%</p> <p>2 = between 50 to 80%</p> <p>3 = greater than 80%</p> | Assessment of quality of national governance | Country level indicators of good governance with specific references to social justice and ecological sustainability | Review literature and data for country level indicators of good governance with specific references to social justice and ecological sustainability | <p>1 = inadequate</p> <p>2 = adequate</p> <p>3 = excellent</p> |
| | Contribution to NRAMP development | Record number of facilitators contributing to NRAMP development and their contribution | <p>1 = less than 50%</p> <p>2 = between 50 to 80%</p> <p>3 = greater than 80%</p> | | | | |

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