



*Development of a National Strategy for Sustainable Wildlife Use
for the Commonwealth of Dominica*

Annual Report 2001-2002

*Prepared by Fauna & Flora International,
With inputs from the Forestry, Wildlife & Parks Division
of the Government of Dominica*

Darwin Initiative for the Survival of Species

Annual Report

1. Darwin Project Information

Project title	<i>Development of a National Strategy for Sustainable Wildlife Use for the Commonwealth of Dominica</i>
Country(ies)	<i>Commonwealth of Dominica</i>
Contractor	<i>Fauna & Flora International</i>
Project Reference No.	<i>162/10/010</i>
Grant Value	<i>£99,754</i>
Start/Finishing dates	<i>May 2001-March 2004</i>
Reporting period	<i>May 2001 – April 2002</i>

2. Project Background

Located in the Windward Islands, the Commonwealth of Dominica is one of the poorer islands of the eastern Caribbean. Dominica also retains a higher percentage of its native habitat than all other islands in the region, despite its relatively small size (751km²). However, recent changes in the banana market have substantially reduced foreign income and further threaten the economy of the island, and increase pressures of wildlife use.

Traditional livelihoods on Dominica are closely linked to the natural environment. Limited opportunities for economic development, coupled with traditional utilisation, contribute to continued extensive use of wildlife, with a number of animals being consumed for food (particularly agouti, birds, frogs and land crabs); and many plant species being collected for various purposes (medicinal plants, vines for basketry, and palms for roofing). Products from these species are either consumed locally, offered for sale to tourists (for example, consumption of mountain chicken frogs), but there are also indications of substantial illegal exports of wildlife.

There is growing concern and anecdotal evidence that current levels of wildlife exploitation are damaging populations and may result in local extinctions. Sustainable use of wildlife is an area which Dominican conservationists feel is important to develop, both to optimize the economic value to local communities and to ensure it does not lead to irreversible declines in resource species. In addition, opportunities exist to develop alternative use strategies – for example through ranching favoured bushmeat species and focusing on eco-tourism development

Prior to this project little work has been undertaken to assess wildlife use, or the biology and productivity of resource species, and the Forestry & Wildlife Division (FWD) lacked the resources and skills to adequately monitor any of the key species. These authorities requested assistance with assessment of wildlife and its use, and with the development of conservation recommendations and monitoring protocols as a national priority.

3. Project Objectives

The **purpose of this project** is to reduce direct threats of over-exploitation facing the wildlife of Dominica, through the participatory development of a National Strategy for Sustainable Wildlife Use, and through building of the in-country capacity for its long-term implementation.

The anticipated **outputs from this project** include:

1. Improved baseline level of social information on key resource species use ;
2. Improved understanding of the biology and status of key resource species;
3. Conservation strategies developed for selected key species, based on information on their ecology and predicted sustainable off-take;
4. Capacity built within FWD and other key agencies;
5. Improved public awareness of the vulnerability of natural resources amongst all stakeholder groups, including key decision makers, local communities and tourists; and,
6. A national strategy for sustainable wildlife use developed in a participatory manner.

These objectives and generalised operational plan remain as indicated within the application.

4. Progress

Prior to this initiation of this project the FWD had entered into discussions with FFI as early as 1995 about the need to identify patterns of wildlife use on the island. In 1998 the FWD initiated their own interview survey with hunters, which provided some anecdotal evidence of species decline. On the basis of this a three year hunting ban was instituted. However, no further wildlife population data was collected during this time to aid decision making with regard to the impacts of lifting the ban, or the need to maintain future closed seasons to allow species recovery. As a result the government had agreed a lifting of the ban for the autumn hunting season in 2000. A visit to Dominica in early 2000 enabled collaborative planning for the project, which was submitted to the Darwin Initiative in October 2001.

The project work kicked off in June 2001 when the project leader visited the island to confirm logistical arrangements and agreements to implement the project. As a result of these meetings a Memorandum of Understanding was signed between FWD and FFI to document roles and responsibilities within the project, and means of communication and co-operation. From this document the FWD was able to allocate staff time to the project, including local co-ordination and trainees. In August a literature review was undertaken to ensure previous research could be taken into account, and to repatriate information to Dominica where required. In addition, searches were conducted to provide other material on wildlife use requested by FWD. This information was incorporated into a simple database and provided to FWD.

Due to a slight delay in the initiation of the project, and the time taken to make arrangements for local staff availability for survey work, the fieldwork did not start until September 2001. At this stage the first two workshop sessions were delivered (GPS and mapping skills; field survey and monitoring skills), and the ecological survey was initiated. Staff from all regions were selected for training, based upon their previous experience, interest and likely involvement in wildlife monitoring activities. The workshops involved formal taught sessions, practice of skills learnt and field sessions. A simple manual to provide ongoing reference for skills outlined in the workshop was delivered to FWD. A data analysis workshop was originally scheduled for the same period, but it was decided that it would be more appropriate to deliver this once more data had been collected.

The ecological assessments for agouti, opossum, land crabs and game birds were initiated earlier than anticipated in the proposal, in order to ensure that at least 12 months data would be collected to help determine reproductive periods for all key species. This will be backed up by more rigorous distributional surveys later in 2002. In addition, surveys for mountain chicken frogs have been delayed to ensure that work is conducted during the best field season for these animals. The methods used in the ecological and monitoring components have focused on the establishment of permanent 1km transects in various parts of the island, where the focal species are known to occur. Monthly counts will be made on each transect by members of FWD staff involved in the FFI training programme, with data being recorded on the standard data sheets developed for the project. FFI staff have provided further support to FWD field workers undertaking the surveys, through the

provision of further training by the conservation biologist/sustainable wildlife use specialist in February 2002. In addition, the project leader was able to evaluate and provide feedback on the progress of data collection during her visit to Dominica in April. So far four complete months of data have been collected by FWD staff, but it is too early to deduce any patterns from this.

The social assessment was originally scheduled as the first input, however due to other commitments the social survey specialist originally identified to undertake this work proved to be unavailable. An alternative social assessment specialist with similar skills and experience was identified, and undertook this element of the training in January 2002. A group of interested FWD staff (and student research associates) was selected by the local project co-ordinator, on the basis of their interests, inter-personal skills and likelihood of being available to lead social surveys in future. Participants were selected from all regions of the island, including the native Carib territory. A training workshop covered general approaches to Participatory Rural Assessment, and simple interview or questionnaire based surveys to collect quantitative social data. The workshop was run in a participatory manner, and involved formal 'lectures, group work and fieldwork, in which skills learnt were applied to assessments in a number of trial communities. A simple manual to provide ongoing reference for skills outlined in the workshop was delivered to FWD.

On the basis of the skills learnt in the social assessment training workshop, the FFI social specialist was able to work with FWD to design an appropriate set of techniques and questionnaire for use to collect data on wildlife use in Dominica. The questionnaire will also collect information to support the development of a stakeholder forum on wildlife use in Dominica. A randomised sampling technique was used to select households for interview within target communities across all major regions of the island. This assessment was undertaken by selected participants in the training workshop who had shown skill in interview techniques. A specially-designed questionnaire-based interview format was used, with strict instructions to ensure effective randomisation and standardisation of the survey. The consistency of use of the questionnaires was evaluated by the project leader during her visit in April. At this stage the social assessment was half completed, and further guidance was provided to ensure that interview standards were maintained.

A public awareness planning workshop was held in April 2002. This training workshop developed on strategic approaches to the development of public awareness plans, and how explored how specific messages can be delivered to key audiences. In addition, the relationship between PR, organisation profile and image and public awareness were explored. Due to the considerable experience amassed by FWD staff in delivering public awareness campaigns over recent years, it was felt unnecessary to deliver training in specific public awareness skills (such as media liaison). However a public awareness overview manual was prepared for future reference. From the lessons learnt within the workshop, the project leader worked with local FWD staff to develop a public awareness plan for the project. This will enable co-ordinated and integrated messages to reach all key audiences, and provides a means to identify the content of project publications and publicity materials, in order to best influence public opinion on wildlife use in Dominica.

Despite a delay in the timing of the public awareness planning workshop, publicity of the project at a national level has already proved highly effective. Media coverage has included three interviews and one news broadcast on Dominican national TV, and two lengthy interviews on national radio talk shows.

The development of the Stakeholder Forum identified as a priority in the project application has been delayed due to the necessity to initiate the development of this forum through appropriate participatory processes, involving a range of initial consultations. So far there has been supportive feedback from these consultations, enabling the process to move forward to the next stage of organising meetings for the Stakeholder Forum.

In general the proposed project schedule has been followed successfully, although there have been delays from the slippage of the original time schedule. Thus some activities anticipated for year 1 will now take place early in year 2 of the project.

<i>Date</i>	<i>Activity</i>
<i>May 2002</i>	<i>UK press release issued</i>
<i>June 2002</i>	<i>Finalisation of public awareness plan and design of publications</i>
<i>July 2002</i>	<i>Participatory assessment with stakeholders concluded and analysed</i>
<i>June/July 2002</i>	<i>Training course on further wildlife census techniques (2 days. 10 FWD staff)</i>
<i>August 2002</i>	<i>Initiate determination of distribution and abundance of key species</i>
<i>August 2002</i>	<i>Continue ecological studies and monitoring of key resource species</i>
<i>August 2002</i>	<i>Training course for 15 FWD personnel on data analysis (2 days)</i>
<i>August 2002</i>	<i>Public awareness materials produced</i>
<i>August 2002</i>	<i>Stakeholder forum established, including wildlife collectors and women's groups</i>
<i>September 2002</i>	<i>Study visit for 3 FWD personnel to ranching propagation initiative</i>
<i>September 2002</i>	<i>National press release in Dominica takes place</i>
<i>October 2002</i>	<i>National press release in UK takes place</i>
<i>October 2002</i>	<i>National TV feature takes place in Dominica</i>
<i>October 2002</i>	<i>National radio feature takes place in Dominica</i>
<i>December 2002</i>	<i>Training course for 15 FWD personnel on rural business development (3 days each)</i>
<i>December 2002</i>	<i>Determination of distribution and abundance of key species concluded (28 days)</i>

5. Partnerships

The relationship between FFI and FWD has developed significantly over the last year, after initial teething problems. These misunderstandings were primarily linked to new ways of working for FWD, who were not experienced in such collaborative international projects, and the intensity of work involved. Although FWD had requested FFI's assistance in the project initially, and had worked collaboratively to develop the project, they had not anticipated that implications of the project for adjusting their staff's already stretched workload. In addition, many staff did not appreciate the origins of the project, being more used to assisting on externally-initiated projects. These initial problems were approached in a number of ways:

- FWD management reassessed staff workloads to integrate the time requirements for the project
- FFI adapted their schedule, workshop plans and survey design to take account of the existing commitments of FWD staff
- FFI held workshops with all field staff and FWD management to clarify project origins and local ownership

- FFI instituted a formalised procedure of circulating ToR well in advance of each trip with a specific itinerary, planned activities and expectations for FWD staff involvement. These ensured that FWD could commit to the aims and local staff requirements for each FFI input.

As a result of these adjustments a strong working relationship has been established based upon mutual respect and regular communications and FFI inputs.

The project team met with staff from a Darwin project operational in the region (and specifically in Dominica, during June 2001 (FSC-CANARI education project), and liaised over the possibility of building upon their outputs. In addition, FFI staff have continued to liaise with the Rare Species Conservancy Fund, and American NGO working on parrot protection in Dominica.

6. Impact and Sustainability

The project has already attracted substantial media interest within Dominica. This will be built upon substantially as the public awareness component of the project is implemented over coming months. The public awareness strategy has already identified key messages about wildlife use, and the project itself, along with appropriate mechanisms to deliver these messages to the different key audiences. The media will continue to be used as an important tool to promote the work of the project at a national level. In addition, the recent social assessment contained an element of perceptual analysis which will provide an important baseline from which to monitor change in peoples' attitudes and behaviour towards wildlife, as a direct result of this project.

No separate exit strategy is seen necessary for this project, as it is designed in such a way as to deliver the skills to enable the FWD to effectively manage the country's wildlife into the future. The information and recommendations from this project will provide direct input to revision of wildlife law, which the FWD then has the remit to implement. The partnerships and participatory approaches developed during this project have been requested by FWD, and they are committed to their future maintenance.

7. Outputs, Outcomes and Dissemination

Table 1. Project Outputs (According to Standard Output Measures)

Code No.	Quantity	Description
12A	1	<i>Collation of available data in hard and electronic (database) forms to allow for repatriation of information</i>
6A	15 Dominicans	<i>Training course for 8 FWD personnel and 7 research associates on assessment of wildlife use</i>
6B	1 week	
8	1 UK staff for 3 weeks	<i>UK staff conduct initial participatory assessment of stakeholders along with key FWD personnel</i>
6A	15 Dominicans	<i>Training course for personnel on use of GPS and mapping</i>
6B	0.8 week	
6A	15 Dominicans	<i>Training course for FW personnel on field surveys and monitoring training</i>
6B	1.2 week	
8	1 UK staff for 6 weeks	<i>UK staff initiate ecological study and monitoring programme for key resource species</i>

20	£2655	<i>Field equipment (rainwear, rucksacks, 3 GPS units, tally counters, waterproof notebooks, altimeters, first aid kits) and a laptop provided to date.</i>
7	<i>3 manuals developed to meet FWD needs.</i>	<i>Training materials (manuals and/or course notes) produced</i>
6A/B	<i>5 Dominicans 0.5 week</i>	<i>Training course for 5 FWD personnel on developing public awareness and education strategies</i>
8	<i>1 UK staff 1 week</i>	<i>Development of public awareness strategy</i>
19A	2	<i>National radio features in Dominica</i>
18A	3	<i>National TV features in Dominica</i>

Where the above outputs table differs from the initial plan in terms of the number of participants and duration of different workshops, this has had to adapt to meet Dominican staff preferences and availability.

In addition, in the original plan a number of press releases were to be developed. However such press releases were not considered appropriate at this stage of the project. As a government department the FWD already has regular direct access to key media (TV and Radio) and considers that these are the most effective mechanisms for dissemination. Indeed, media coverage (TV and radio) in Dominica has been greater than anticipated. Press releases in the UK have been delayed until some progress has been made to report upon, and thus increase the likelihood of uptake in the UK media. However, mention of the project has been included in the FFI newsletter.

The publications produced for the project this year include two survey manuals developed specifically to assist in biological survey techniques and social survey approaches. These are available from the FFI project leader. In addition, a manual on approaches to designing public awareness campaigns was produced for FWD.

Information on the project and the results will be disseminated through a public awareness campaign conducted by FWD. This campaign will continue after the end of Darwin funding. In addition, the production of manuals covering the key skills provided through the project, will enable FWD to continue to provide similar training to new staff.

8. Project Expenditure

Due to a delayed start of the project the inputs were running later than anticipated, and attempts to catch up to the original schedule have not been successful. This is reflected in lower than expected expenditure in this year's budget.

Table 3: Project expenditure during the reporting period

Item	Budget	Expenditure (at 30.03.02)
Salaries (specify) ¹		
Dr Abigail Entwistle		
Evan Bowen-Jones		
Sara Oldfield		
Dr Jenny Daltry ²		
Dr Sarah Gillingham ³		
Simon Mickleburgh		
Local manager ⁴		
Local co-ordinator ⁴		
Counterparts ⁴		
Rent ,rates heating lighting etc		
Office administration costs ⁵		
Capital items/equipment ⁶		
Travel, subsistence ⁷		
Workshops ⁸		
Printing ⁹		
Total	£50,461	£24,263

¹ A number of the salary allocations were re-arranged upon the initiation of the project, reflecting slightly different timing of trips than initially anticipated. In addition, Dr Jo Morley was originally proposed as the project assistant, but due to a change in her role in FFI, these responsibilities were split between the project leader and Mr Simon Mickleburgh

² Dr Daltry's trip has been delayed to ensure that it will coincide with the best field season for amphibians, and can best accommodate the workplans of FWD staff.

³ Dr Annie Perez-Laroux was originally named for this role, but was unavailable

⁴ Agreement of roles for local staff took longer than expected, but is now completed. Delays in the implementation of the project schedule have resulted in delay in project work by counterparts.

⁵ £600 put aside for FWD communication costs has not yet been transferred due to delays in setting up the necessary processes in Dominica

⁶ It has taken longer than expected to determine the priority equipment needs but the remaining funds for equipment will be spent in 2002.

⁷ It has been agreed with the Darwin Initiative that the money allocated for local travel expenses (£5000 in year 1, plus £8000 over next two years) be reallocated towards the purchase of a project vehicle. This vehicle will be purchased later in 2002 and will subsequently be handed over to FWD who will cover all running and maintenance costs for the project

⁸ Lower than anticipated workshop costs reflect delays in implementation.

⁹ Changes to the schedule mean that public awareness materials will not now be printed before June 2002.

The table above only accounts for income and expenditure for the grant received from the Darwin Initiative. In addition the following co-financing was received for the project:

<i>Details of co-financing</i>	<i>Source</i>	<i>Budget</i>	<i>Expenditure</i>
<i>Contribution to Evan Bowen-Jones's time on the project (2 weeks)</i>	<i>Rufford Foundation</i>		
<i>FWD salaries (in-kind)¹⁰</i>	<i>FWD/Government of Dominica (in kind)</i>	<i>£XXXX</i>	<i>To date, days worked equivalent to an estimated £YYYY contribution</i>
<i>Office costs in Dominica</i>	<i>FWD/Government of Dominica (in kind)</i>	<i>£500</i>	<i>Received (estimated equivalent cost = £500)</i>

9. Monitoring, Evaluation and Lessons

Skills transfer and capacity building is an important element of this project and its effectiveness will be tracked in a number of ways. Evaluation questionnaires are completed by participants at the end of every training workshop to determine the appropriateness and usefulness of training delivered. In addition, subsequent implementation of the skills delivered within the FWD workplan are tracked by FFI staff to determine effectiveness, and to provide follow-up support where needed. The fact that survey teams are now up and running and collecting biological and social data in an organised and rigorous way, using the methods delivered in the training sessions, indicates the capacity building elements of the project is proving effective.

- The data collection will be central in developing the outputs for this project, and quality control on the data collection is ensuring that it is on track and of appropriate standard.
- Changes in public opinion and behaviour (with regard to respecting wildlife law) will also be key to success of this project, and will be monitored through perceptual analysis. A baseline for perceptions has already been established through the social analysis element. Informal consultations will also be used to determine attitudinal shifts.
- The number of infractions of the law will also be tracked by FWD into the future to identify trends and response to this project.
- Species monitoring protocols developed under the project, and now being undertaken by FWD staff, will allow changes in wildlife numbers to be tracked into the long term, in order to determine project impact.

10. Author(s) / Date

Abigail Entwistle, 14th April 2002

¹⁰ Due to the late start of fieldwork fewer days have been worked by FWD staff this year than expected – the work will now be conducted in year 2.

Annex 1. Logframe analysis for project

Project summary	Measurable indicators	Means of verification	Important assumptions
<p>Goal To assist countries rich in biodiversity but poor in resources with the conservation of biological diversity and implementation of the biodiversity convention.</p>	<p>Project assistance provided by Darwin Initiative funding.</p>	<p>Publications acknowledging the impact of the Darwin Initiative project.</p> <p>Time spent in-country by the Darwin funded project.</p>	
<p>Purpose To reduce direct threats of over-exploitation facing the wildlife of Dominica, through the participatory development of a National Strategy for Sustainable Wildlife Use, and building of the in-country capacity for its long-term implementation.</p>	<p>Production of a National Strategy for Dominica.</p> <p>Training of other staff by Darwin trainees from workshops.</p> <p>Long-term sustainability of off-take of key species.</p>	<p>Published National Strategy</p> <p>Evaluation from workshops, and reports from implementation of strategy.</p> <p>Reports from long-term monitoring of resource species.</p>	<p>Political stability and will maintained.</p> <p>Socioeconomic conditions for sustainability continuing to be met.</p>
<p>Outputs</p> <p>1.Improved baseline information on resource species use.</p> <p>2. Improved understanding of the biology and status of key species</p> <p>3. Conservation strategies developed for key species</p> <p>4. Capacity built within FWD and other agencies</p> <p>5. Improved public awareness</p> <p>6. National strategy for sustainable wildlife use developed.</p>	<p>1.Gap analysis on current baseline data completed.</p> <p>2. Initial studies of key species completed.</p> <p>3.Four species conservation strategies completed.</p> <p>4. FWD & other agencies able to implement and sustain project objectives.</p> <p>5. Increased awareness of need for sustainability.</p> <p>6. Publication of national strategy for sustainable wildlife use.</p>	<p>1. Project reporting & project research plan.</p> <p>2. Project publications.</p> <p>3. Project publications.</p> <p>4.Evaluation forms from workshops & departmental progress reports.</p> <p>5. Consumer questionnaires.</p> <p>6. National strategy for sustainable wildlife use for Dominica produced & adopted.</p>	<p>1. Effective reporting regime.</p> <p>2. Ethos of generating wider awareness of the project.</p> <p>3. Ethos of generating wider awareness of the project.</p> <p>4. Access to departmental records.</p> <p>5.Honest responses to questionnaires.</p> <p>6. Political will.</p>

<p>Activities:</p> <p>1.1 Analyse available data</p> <p>1.2 Initial participatory assessments</p>	<p>1.1 8 days FFI; £800</p> <p>1.2 10 days FFI; 30 days FWD; travel; £6,305</p>	<p>1.1 Review document & bibliography</p> <p>1.2 Social report</p>	<p>1.1 Access to relevant publications</p> <p>1.2 Truthful participation from those questioned</p>
<p>2.1 Determine distribution and abundance of key species</p> <p>2.2 Initiate further ecological studies</p> <p>2.3 Review the historical & current sustainability of off-take</p>	<p>2.1 42 days FFI; 125 staff days FWD; travel; equipment; £26,056</p> <p>2.2 50 days FFI; 75 days FWD; travel; £17,495</p> <p>2.3 5 days FFI; 5 days FWD; £1,415</p>	<p>2.1 Survey report and published article.</p> <p>2.2 Research & monitoring strategy produced</p> <p>2.3 Paper on off-take data</p>	<p>2.1 Accuracy and standardisation of data collection</p> <p>2.2 Willingness and training of FWD personnel</p> <p>2.3 Accuracy of past and present data collection</p>
<p>3.1 Produce species specific sustainable management guidelines.</p> <p>3.2 Support the ongoing review of national wildlife legislation.</p>	<p>3.1 20 days FFI; 10 days FWD: £4,640</p> <p>3.2 5 days FFI; 5 days FWD; £1,440</p>	<p>3.1 Published guidelines</p> <p>3.2 Management guidelines incorporated into new legislation</p>	<p>3.1 Adequate planning data available to project</p> <p>3.2 Willingness and time</p>
<p>4.1 Work with FWD counterparts in all phases.</p> <p>4.2 Hold training courses for FWD personnel</p> <p>4.3 Establish a Stakeholder Forum on Sustainable Use.</p>	<p>4.1 200 days FFI; 608 FWD staff days; costs equal to total budget</p> <p>4.2 30 days FFI; 362 FWD staff days; travel; workshop costs; £15,090</p> <p>4.3 10 days FWD; £850 (Project co-ordination, communication and reporting costs: £12,747) (Management and office costs: £9,750)</p>	<p>4.1 Collaborative project reporting</p> <p>4.2 Workbooks and evaluation forms from courses</p> <p>4.3 Minutes of Stakeholder forum meetings.</p>	<p>4.1 Good motivation</p> <p>4.2 Willingness and time</p> <p>4.3 Public interest</p>
<p>5.1 Plan public awareness campaign</p> <p>5.2 Develop a suite of educational materials.</p> <p>5.3 Regularly publicise the project.</p> <p>5.4 Target wildlife collectors and women's groups for regular discussions</p>	<p>5.1 10 FFI days; 10 days FWD: £2,880</p> <p>5.2 14 FFI days; 42 FWD days; travel; printing; £10,791</p> <p>5.3 5 FFI days; 21 FWD days; £2,615</p> <p>5.4 20 days FWD; travel; £1700</p>	<p>5.1 Public awareness plan completed.</p> <p>5.2 Educational materials</p> <p>5.3 Media articles</p> <p>5.4 Information from discussions fed into strategy</p>	<p>5.1 Willingness to attend meetings</p> <p>5.3 Public interest and marketability</p> <p>5.4 Appropriate social mechanisms for inclusion</p>
<p>6.1 Develop a National Sustainable Use Strategy.</p> <p>6.2 Work with FWD on relating protected area & buffer zone management of key species.</p>	<p>6.1 20 days FFI; 30 days FWD; printing costs; travel and workshop costs; £8,745</p> <p>6.2 5 days FFI; 15 days FWD; workshop costs; £2,315</p>	<p>6.1 National Sustainable Use Strategy published</p> <p>6.2 Revised PA management plans</p>	<p>6.1 Political will</p> <p>6.2 Commitment and willingness for change</p>