# ADOPT-A- RIVER PROGRAMME PHASE II: DEVELOPMENT OF AN IMPLEMENTATION PLAN IMPLEMENTATION MANUAL





# Republic of South Africa

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## **DOCUMENT INDEX**

### Reports as part of this project:

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N000000RET0209	Adopt-a-River Programme Phase II: Development of an Implementation Plan. Database of stakeholders
Authors	A. Neumann
N000000RET0309	Adopt-a-River Programme Phase II: Development of an Implementation Plan. Monitoring Models
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N000000RET0409	Adopt-a-River Programme Phase II: Development of an Implementation Plan. Institutional aspects/Governance Structures
Authors	Y. Burger
N000000RET0509	Adopt-a-River Programme Phase II: Development of an Implementation Plan. Water Resource Quality Situation Assessment
Authors	H. Hendriks and J.N. Rossouw
N000000RET0609	Adopt-a-River Programme Phase II: Development of an Implementation Plan. Manual for Volunteer Monitoring
Authors	K. Versfeld and J.N. Rossouw
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Authors	P. de Souza, K. Versfeld and J.N. Rossouw
N000000RET0909	Adopt-a-River Programme Phase II: Development of an Implementation Plan. Training Material and Training Needs
Authors	K. Versfeld and J.N. Rossouw
N000000RET1009	Adopt-a-River Programme Phase II: Development of an Implementation Plan. Implementation Manual
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#### **Resource Quality Services Project Management Team**

Mr. B. Msimanga/Mr. P. Botes/Mr. B. Madikizela, Acting/Deputy Director: RQS

Mr. R. Sekwele, Assistant Director: RQS

#### **Professional Service Provider Study Team**

Mrs. L. Rossouw Project coordinator
Ms. Y. Burger Independent Consultant

Mr. J.N. Rossouw

Mrs A. Neumann

Ms. H. Hendriks

Aurecon

Ms. K. Versfeld

Aurecon

Mrs. C. Beuster

Aurecon

Mrs. S Swartz

Aurecon

Mr. P. de Souza Emanti Management
Ms. T. Manxodidi Emanti Management
Mr. R. Compaan Emanti Management
Mr. G. Mackintosh Emanti Management
Mr. W. Retief Emanti Management

#### **Project Management and Study Team**

Dr. A. Kühn

DWA: RQS

Mr. B. Msimanga/Mr. P. Botes/Mr. B. Madikizela

DWA: RQS

Mr. R. Sekwele

DWA: RQS

Ms. M. Swart

DWA: RQS

DWA: RQS

Mr. G. Celliers

DWA: RQS

Mr. J. Methula DWA: Stakeholder Empowerment

Ms. N. Matyana

Ms. P. Makhanya

Ms. N. Tabita

DWA: D: Regions

DWA: D: Regions

Mr. M Matlala

M Manqalasa

DWA: Information Programme

DWA: Working for Water

Water Research Commission

Ms.Y. Burger

Mrs. L. Rossouw

Professional Service Provider

Professional Service Provider

#### **Project Steering Committee**

Dr. A. Kühn DWA: RQS
Mr. B. Msimanga/Mr. P. Botes/Mr. B. Madikizela DWA: RQS
Mr. R. Sekwele DWA: RQS
Mr. M. Matlala DWA: IP

Mr. J. Methula DWA: Stakeholder Empowerment

Ms. N. Matyana DWA: D: Regions Ms. P. Makhanya/ Ms. N. Matyana DWA: D: Regions Ms. N. Tabita DWA: D: Regions

Dr. S. Mitchell/ Dr. S. Liphadzi

Mr. S. Tshitwamulomoni

Ms.Y. Burger

Mrs. L. Rossouw

Water Research Commission

DWA: Biodiversity Planning

Professional Service Provider

Professional Service Provider

#### **EXECUTIVE SUMMARY**

An initiative to create awareness amongst all South Africans of the need to care for our scarce water resources was raised in Parliament in 2006. This was done to foster public participation in the protection and management of our rivers and also as a sign of their own commitment.

To give effect to this initiative the Minister requested the former DWAF officials to formalise and implement such a programme as soon as was practicably possible. The Adopt-a-River Programme was initiated. The aim of this programme (at least at the onset) is to create awareness amongst all South Africans of the need to care for our scarce water resources and to facilitate their participation in the protection and management these resources in an integrated manner.

A phased approach is being followed to develop and implement the programme. Phase 1 was the initiation and development of a Strategic Framework. Phase 2, which is the topic of this assignment, is the development of an Implementation Plan and the preparation for Phase 3 where pilot implementation on selected rivers will take place.

Key principles for a sustainable Adopt-a-River Programme include institutional/governmental support and guidance, starting small, providing training and education opportunities, keep the goals realistic, secure funding, realise that it is a lengthy process, promote stewardship, make connections and create partnerships and co-ordinate with similar initiatives and have incentives.

The Adopt-a-River Programme can play a vital role in creating an awareness of the importance of protecting and managing our water resources within an integrated natural resources management framework. It is anticipated that interest for involvement will be mainly issue driven and specific objectives have to be identified before adopting a river.

The creation of partnerships and sources of funding at different levels were discussed.

The leadership and structure of the programme is crucial to the sustainability of the Adopt-a-River programme. Co-ordinating the Adopt-a-River initiatives to achieve sustainable results on a national scale is a formidable task. There is no single institution in South Africa with the capacity to host and implement the programme nationally; therefore it will be necessary to form partnerships between authorities, agencies, concerned community organisations and the public, to be able to adequately fulfil the roles involved in adopting rivers. The Programme will also require a full time national programme manager who champions the Adopt-a-River Programme and co-ordinates all activities of an Adopt-a-River Programme. At the onset this person will perform administrative functions, and support staff will subsequently be added as the need arises. The first pilot rivers are nationally co-ordinated by the National Co-ordinator, assisted by a progressively growing centralised team, until such time as the intermediate layers in the structure are warranted by the number of adopted rivers that have to be co-ordinated by the team. The work load will dictate the pace at which staff will be appointed to the programme at national and subsequent regional levels. What this means is that until several rivers in close

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proximity in one province or catchment management area have been adopted, there will be no provincial or regional layers in the structure.

Resources must be available from the co-ordinator. The Adopt-a-River national co-ordinator must have marketing skills and resources to attract patrons, create links with related organizations and programmes, create an awareness campaign, establish a network of trainers and practitioners to support the Programme and identify training needs and required facilities. The co-ordinator must establish a mechanism to monitor the success of the Programme and create mechanisms to facilitate sharing and exchange of knowledge and experience amongst the community of Adopt-a-river participants and stakeholders. The co-ordinator must also establish an award and recognition system to acknowledge participation and contributions of stakeholders and patrons.

An Adopt-a-River Website needs to be developed. The website should contain information about the Adopt-a-River Programme, how to become involved, links to other programmes, projects and initiatives, educational tools and other training materials available, a library, maps showing river reaches that have been adopted, and frequently asked questions as well as handling of on-line queries. Upcoming events should also be advertised on the website. The website acts as a document repository and in future may also be part of the information management to both load and view river water quality data.

Reports have been compiled in support of the design of the Adopt-a-River Programme. A communication report focusing on active and passive communication to create awareness and design a website is available as well as a report on available training materials. Two monitoring manuals have been written. The first report is a volunteer monitoring co-ordinator's manual on national and regional level and the second report is a sampling manual for volunteers.

This Implementation manual can be seen as the starting point of the next phase, the pilot implementation of the Adopt-a-River Programme.

The manual must be seen as a guideline as to the requirements for the pilot implementation phase, keeping the key principles for a sustainable Adopt-a-River Programme in mind.

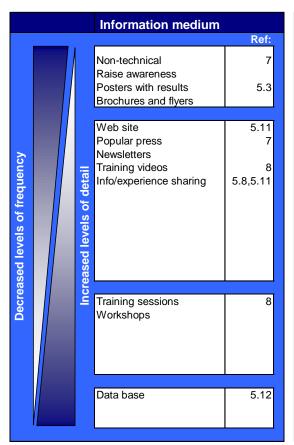
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#### 1. HOW TO USE THE MANUAL

#### Flow diagram of the components/activities



	Support type	
		Ref:
	Capacity building Build up leaders/champions Demarcate roles & responsibilities	
Decreased levels of support	Coordination Raise visibility of programme Guidelines Resource centre	9 5.8
<u>a</u>	Technical & logistical advice	4, 5.1,5.4
f s	Facilitate learning - courses - from peers	5.4, 5.5 5.5, 5.11
o s	Standardise eg. monitoring	5.7
Ze Ze	Facilitate access to funds	3
<u>o</u>	Trouble shooting	5.7, 5.8
eq	Access to Expertise	5.7, 5.8, 5.10, 5.11
ias	Promote incentives/rewards	5.9
Si C		
De	Links between programmes	5.2, 6
	Media releases Share learning on programme	
	Programme maintenance	
	Motivate when realignment	
	in policy becomes necessary	
	Stimulate debate	5.11
	Feedback	5.7

Participant Category	End objective
Lay public School children	Behaviour change
Informed public Students Conservation agencies Friends ofgroups Industry Business	Active involvement Effective learning
Water resource managers DWAF officials DEAT officials DWAF regions CMAs LA councillors/officials  Researchers WRC	Information to decision makers  Publications Shared knowledge Extended knowledge

#### 2. BACKGROUND TO THE PROGRAMME

Objective The "Adopt-a-River" programme aims to create awareness among South Africans of the need to care for our scarce water resources and to actively participate in the protection and management of our water resources **Phased** The "Adopt-a-River" programme is being implemented in a phased manner: implementation Phase 1 – Development of a strategic framework (Completed) Phase 2 – Development of an implementation plan (This project) Phase 3 – Implementation of the programme (Future) **Key principles** Institutional/governmental support and guidance for sustainable Start small, expand as it gains momentum implementation Training, education and awareness creation Advocacy in schools Keep goals and those of stakeholders realistic Obtain secure funding Prepare for lengthy process Get commitment from stakeholders and volunteers Legal responsibilities towards stakeholders and volunteers Catchment stewardship Provide appropriate incentives Make connections Create partnerships Coordination of the programme Don't underestimate capabilities of local stakeholders and volunteers Learn from local experience and similar initiatives

#### 2.1 WHAT IS THE ADOPT-A-RIVER PROGRAMME?

The then Department of Water Affairs and Forestry (DWAF) has initiated an "Adopt-a-River" programme as a means of creating awareness among South Africans of the need to care for our scarce water resources and to actively participate in the protection and management of our water resources.

This programme was initiated when a question was asked in Parliament whether South Africa's rivers were healthy and fit for use. Some Members of Parliament volunteered to adopt a river and serve as patron for that river, as a sign of their own commitment ton protecting the health of our rivers.

It has to be emphasised that the programme has no intention to replace existing initiatives, but to co-ordinate related activities in close geographic proximity.

#### 2.2 WHAT DOES THE PROGRAMME WANT TO ACHIEVE?

Adopt-a-River aims to piece together in a sustainable manner the objectives of aquatic ecosystem health, economic growth, human health and co-dependent land and water use

principles. Human behaviour lies at the hub of most, if not all, of these aspects and will be treated as the key success factor in sustainability of the programme

#### 2.3 HOW IS THE PROGRAMME IMPLEMENTED?

Because of its magnitude, and to ensure that it will gain momentum, attract resources and be sustainable, implementation of the programme is undertaken in phases:

- **Phase 1:** Completed in 2007, entailed drafting a Strategic Framework for the development of the Adopt-a-River programme. It spells out specific objectives relating to active participation by water users in the care of our water resources.
- Phase 2: Commenced in 2008 and focuses on the development of an implementation plan by July 2009. This comprises identification of internationally successful volunteer monitoring models and South African monitoring models in maintaining river and wetland health, and to use the information in designing a programme that would be appropriate for South African water conditions, congruent with our society's values.
- Phase 3: The programme design and the implementation plan will be tested in selected rivers across the country as part of the piloting of the Adopt-a-River Programme and the design will be revised where practical constraints render that necessary. Development of tools, techniques and training material will take place on an ongoing basis, as well as information and task sharing with interested parties.
- Phase 4: In this final phase the Adopt-a-River programme will be expanded to any area where interested parties would want to participate in the Adopt-a-River programme and learn about the protection and management of their water resources. The aim will be to mobilise volunteers to assist in keeping our rivers fishable and swimable and to safeguard the health of the rivers, wetlands, estuaries and reservoirs in a sustainable way.

#### 2.4 WHY INTEGRATED NATURAL RESOURCE MANAGEMENT?

South Africa lies in a semi-arid region with highly variable rainfall and high evaporation rates. The increasing demand for water from a growing population and expanding economy has to be met from progressively dwindling water resources. To ensure the sustainable future use of our natural resources, both the quantity and quality of water and environmental resources must be managed. This can only be achieved through integrated natural resources management and the involvement of all the stakeholders, from government level through to local communities and individuals.

#### 2.5 KEY PRINCIPLES OF A SUSTAINABLE ADOPT-A-RIVER PROGRAMME

The co-ordination of an Adopt-a-River Programme is crucial to its success. The co-ordinator is responsible for informing stakeholders, funding agencies and other partners about all aspects of their project of interest.

Based on lessons learnt from both international and local case studies, the programme will be implemented as follows:

#### Institutional/governmental support and guidance

Mechanisms will be provided for different catchment organisations to co-ordinate activities, exchange ideas, and share experiences so that programmes can be efficiently and effectively executed.

Public awareness campaigns will be launched to increase understanding of the importance of integrated resource management.

Collaborative partnerships will be built with local business, universities, industry (including forestry, agriculture, mining and energy), all levels of government, and community groups.

#### Start small

It is generally recommended that one should start small, i.e. with a pilot study, or on a very small scale i.e. with a short river stretch, before full implementation of a monitoring/awareness creation project. A pilot project that serves to test out methods, training sessions, and organizational skills can keep you from being overwhelmed and allows you to evaluate and refine your project before moving on to more ambitious efforts.

#### Training and education

Public education and awareness programmes are an important component of catchment plans to build support for, and also encourage stakeholder participation in, catchment management.

Good training equips group members with skills to produce reliable, credible data and an understanding of why it is being collected and what it means. Benefits of training increases the confidence of the participants, acts as personal motivation from increased opportunities, it is an important social networking event and improves personal safety in the field and minimizes possible accidents and mistakes.

The key areas where training is required will depend on the existing skills and experiences of group members. It will also depend on their roles, responsibilities and functions within the group. A "skills audit" should give information about existing skill levels and required skills. The skills needed will depend in part on what is being monitored and what the data will be used for. Some training will be mandatory for all members, i.e. health and safety training. Training can range from informal on-the-job training through to formally accredited courses. It is important to be flexible in how, where and when training is delivered.

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Well-trained stakeholders/volunteers can play a vital role in assisting institutions to perform their monitoring functions effectively. By involving stakeholders/volunteers in the management of water resources and exposing them to training, not only the institutions benefit, but communities become more aware of the urgency and importance of protecting precious water resources.

A well-structured training programme is required. Many training programmes exist internationally and locally. A skills audit will identify the specific training requirements of a stakeholder/volunteer group and this must fit in with the objectives of their monitoring goals. Once this is done it is proposed that they tap into the various exiting training programmes and select the most appropriate programme that will effectively address their needs. If nothing were available one would have to source funding to develop a specific programme to suit their needs.

#### **Advocacy**

Raising awareness of environmental issues ought to start in schools. This way a future generation will be created who will behave with sensitivity towards sustaining the natural environment.

#### Keep your goals-and those of your stakeholders/volunteers-realistic

Chances are slim that your data will ever be used in court to stop a polluter. Data collected for such regulatory purposes requires a very high degree of quality assurance. Most stakeholder/volunteer data is used to educate the community and to screen for potential problems.

Short-term water quality monitoring, clean-up activities and awareness creation activities that are project based and community initiated and driven, for example have a better chance of success than long-term ongoing routine monitoring, as the long-term monitoring does not produce the same kind of immediate, visible results as the smaller projects.

#### Secure funding

It is critical to secure funding prior to the initiation and implementation of an Adopt-a-River project. It is just as critical to have a secure source of funding. It is even better to have multiple secure sources of funding.

Stakeholder participation in Adopt-a-River programmes can be organised and supported in many different ways. Financial support may come from government grants, partnerships with business, endowments, independent fundraising efforts, corporate donations, membership dues, or a combination of these sources.

#### Lengthy process

Create an action plan: The aim of an action plan is to allow your group to move from an awareness of water quality/quantity problems, to eventually co-ordinating and implementing actions that will have a beneficial impact on the water resource. An action plan will help focus your activities, and consequently you will manage water resource challenges more efficiently.

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It takes time to establish an Adopt-a-River programme of any nature. Proper planning is essential. If the use of volunteers are considered, all the structures and funding to initiate the programme should be in place before volunteers are recruited, unless the stakeholders were the ones that initiated the activity.

#### Commitment of stakeholders/volunteers

Stakeholders/volunteers must be inspired, motivated, keen and caring, to name but a few of their characteristics that will enhance their commitment to a specific Adopt-a-River programme.

The attitude of people plays an important role in their availability to participate in a programme.

#### Responsibilities towards stakeholders/volunteers

Institutions must be aware of legal responsibilities towards especially volunteers, if any exist. If there are no legal protective measures in place, the volunteers should be informed accordingly, before they commit themselves.

#### Stewardship

Catchment stewardship promotes joint target setting, monitoring, and evaluation, leading to strong accountability in achieving shared goals and objectives.

Catchment stewardship, as promoted in Canada, focuses on promoting, monitoring, and conserving the ecological health and biodiversity in a catchment. Since catchments often span many jurisdictional boundaries (e.g., of governments, of agencies, and of organizations), effective catchment stewardship requires strong collaboration among communities and all levels of government. Building understanding and partnerships among different communities, improving collaborative and inclusive decision-making, and respecting community rights are all key components of successful catchment stewardship.

#### **Incentives**

It does not matter how committed a stakeholder/volunteer is, there must be incentives such as training (enhancing future work opportunities), feedback on work well done, valuable use of the collected data or visible results from their efforts and acknowledgement of their contribution to their communities. The importance of a well-structured and co-ordinated approach in an Adopta-River programme cannot be stressed enough.

Maintain volunteer interest and morale by ensuring that the programme as a whole is credible. A credible program is one that incorporates regular review and analysis of people procedures such as monitoring training, satisfaction and morale as well as technical matters and data recording and reporting. Do not under-estimate local expertise. Arrange occasions when monitoring groups and water quality experts can meet, ask questions and enjoy being part of a catchment team. Also use newsletters, phone calls and easily understood and useable reports to keep your group informed of results, programme progress and events. Be sure to publicise any action or improvement in water quality that results from your activities or monitoring.

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#### **Make connections**

Create awareness amongst all stakeholders about the proposed activities. Ensure that relevant government water and land managers, local government officials, and conservation groups are involved. Also include groups or individuals that may be contributing to the decline of water quality.

The more people you talk to in your community and within local and government agencies/departments/ industries, the more friends and supporters your program will have. Include potential data users in all phases of your project's development.

#### **Partnerships**

Partnerships are the core of an Adopt-a-River programme. It can be between public and private sectors, between public and government departments/agencies or between public and learning sectors or any combination of these. These partnerships can be based on a number of approaches. Projects can be categorised along a continuum of increasing community involvement and control.

The bottom-up approach is more effective at building a sense of community and an appreciation for the power of organized groups. It gives the local stakeholders a sense of ownership of the project, and encourages them to become environmental stewards and advocates committed to seeking community unity for action. It also leads to a higher level of understanding and empowerment. The other partner provides the specific protocol, training, supplies, and equipment. The local stakeholders/volunteers provide the manpower.

The bottom-up, community-based model has the potential to involve participants in every step, from defining the problem through communicating the results and taking action. The bottom-up approach does not dispense with scientists/trainers, etc.; their involvement is critical to produce valid, credible data or actions. However, their role is to advise rather than to set the agenda for the stakeholder group.

There are also benefits to a top-down approach. Some stakeholders prefer to work on a "ready made" project rather than investing the time and energy required for community-designed programs. Furthermore, the greater degree of institutional control over study design, methods, and data analysis has made possible more robust data that are more acceptable to the scientific community and possible data users.

The strength of top-down programmes is their ability to co-ordinate large numbers of volunteers/ stakeholders, span a wide geographic area, and collect and manage a large amount of data. Such programmes can answer important scientific questions that would be difficult to answer any other way. The downside is that the role of local stakeholders/volunteers is usually limited to data collection.

There are many potential partners to the Adopt-a-River Programme and specific partnerships will be established based on local interest

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- Officials, councilors, water boards, water management areas
- Residents along a river reach, e.g. Friends of .... groups<sup>1</sup>
- School children
- Organisations that are socially and environmentally conscious, e.g. Scouts, Landsdiens, South African National Parks (SANParks), academic institutions and development bodies or projects
- Any interested Non Government Organisation (NGO) or community organizations
- Industry and business in the vicinity of the river, especially those who perform activities traditionally perceived as hostile to the environment
- Non Government Organisations.

#### Co-ordination

The co-ordination of an Adopt-a-River programme is crucial to its success. The co-ordinator is responsible for keeping the stakeholders, the funding agency as well as all other partners involved in a specific Adopt-a-River programme informed about all aspects of the project.

#### Don't underestimate local stakeholders/volunteers

Never underestimate the capabilities of local stakeholders/volunteers. They relish the challenge, but more importantly, they want their effort to count for something. They should be seen as equal partners in an Adopt-a-River programme.

#### Learn from local experiences of similar initiatives

It is important to link with existing Adopt-a-River type initiatives as well as promote new initiatives. The Adopt-a-River Programme will link and co-ordinate initiatives.

#### 2.6 REASONS FOR PARTICIPATING IN THE PROGRAMME

The Adopt-a-River Programme can play a vital role in creating an awareness of the importance of protecting and managing our water resources within an integrated natural resources management framework. With awareness comes understanding, and hopefully behaviour change, and the public can assist in preventing and solving water related problems.

It is anticipated that interest for involvement in Adopt-a-River will be mainly issue driven. Communities who have acute and visible pollution problems in their river corridor are more likely to want to participate in the programme than those who purely understand the need to preserve a natural resource for the future.

Objectives have to be very specific before adoption of a river reach, e.g. river clean ups or during winter months, or until there no longer are visible debris in the water, or for the R80 000

nouid be seen as equal partners in an Adopt-a-River project

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<sup>&</sup>lt;sup>1</sup> Local stakeholders/volunteers often relish the challenge and want their effort to count for something. Ideally they should be seen as equal partners in an Adopt-a-River project

donated by the community. Data or measurement will support measuring achievement of the objective.

At the local level a potential resource exists that can be harnessed by the implementer of Adopta-River. Groups often spontaneously mobilise themselves and involve roleplayers to implement programmes with similar objectives to those of Adopt-a-River. The community or a local institution identifies and co-ordinates local clean-up or restoration initiatives. Bodies like Men on the side of the Road, SoapKidz and Collect-a-Can can be drawn on to assist with execution.

#### 2.7 CHECKLIST FOR SELECTION OF RIVER CORRIDORS<sup>2</sup> TO BE ADOPTED

The following can be used as guidelines for selecting river corridors for Adopt-a-River activities.

There is a real interest from local communities in a specific river corridor. The interest may stem from concerns about the degraded state of the river due to pollution (i.e. there is a need to improve the health of the river), or it may stem from concerns about preventing the deterioration of a river (i.e. protect the good health of a river corridor).

The problems in the river are related diffuse pollution, i.e. mobilising communities to institute land-based remediation measures can lead to an improvement of the health of the river.

Solutions to the problems have to be within the ambit of Adopt-a-River: the programme has to be able to contribute by raising awareness, and behaviour change along the river reach would result in visible improvement over a reasonable period.

Land-use changes and rehabilitation of infrastructure are not within the scope of activities in which Adopt-a-River would typically engage. Responsibility for situations where water demand management is needed to address competition for resources belongs with water resource managers, and not in the Adopt-a-River programme. Mitigation of chemical spills likewise, is a specialist field which is better left to the experts in the field. The role Adopt-a-River can play here would be to bring the problems to the attention of the relevant authorities, when that should prove necessary.

Communities or key stakeholders in an area have expressed a desire to adopt a specific river corridor and a willingness to become involved in Adopt-a-River activities.

<sup>&</sup>lt;sup>2</sup> The word "river corridor" refers to a specific river reach and the riparian area adjacent to the river.

#### 3. SOURCES OF FUNDING

National level	Funds for the Adopt-a-River programme funds should be secured from government
funding	allocations, as well as from national and international sponsors.
	The funds are needed to establish, guide and track the programme.
	The programme has the responsibility to disburse funds in compliance with the prescriptions of the benefactors.
River/project level funding	Funding can be made available on an <i>ad hoc</i> for individual Adopt-a-River projects. The pace for disbursing funds is dictated by the geographic spread of rivers adopted.

This section provides details on which funding can be made available via the programme, and also which aspects cannot be funded from programme budgets.

Procedures for applying for funds are also briefly discussed.

#### At national level

**Note:** Stable funds from diverse sources have been dedicated for management and execution of the Adopt-a-River Programme, to ensure a sustainable initiative.

By nature, ring-fenced funds do not contend for resources with other priority projects inside a department on a year-on-year basis. It is therefore necessary to have strict rules concerning application of these funds, to prevent conflict with general procurement practices and ethics.

Programme funds come from government allocations, as well as from interested sponsors, nationally and internationally. The funds are needed to establish, guide and track the programme and the programme has the responsibility to disburse such funds in compliance with the prescriptions of the benefactors. During the first five years funds are therefore available for the following:

- Awareness/marketing of the programme at national level
- Communication to national roleplayers in the natural resource management arena
- Lobbying to aid agencies, business and industry for active support of the programme
- Fund raising to enable the programme to gradually become self funding
- Strategic guidance to the programme
- Programme management and administration by a full time national co-ordinator
- Salaried staff, as a single point of contact and follow up mechanism for queries
- Standardisation of procedures
- Identification of resource/expertise needs
- Procurement of resources for the general programme (but not for individual projects)
- Information dissemination to all parties, including printing/media costs
- Information/Guidance to roleplayers at the river face
- Resource centre and staff
- Development of programme publicity material

- Provision of training facilities
- Development/sourcing of programme training material
- Oversee experts sourced by the programme
- Allocation of roles amongst contending institutions
- Forging links with relevant national programmes
- Education/training resources to support natural resource managers in government Programme reporting at national level and to sponsors
- Website/Data base and other means of communication
- Identification of research needs

River care teams may access any of the facilities at no cost to their projects. Quotes may be obtained for the costs of training courses at a mutually acceptable location. Accommodation costs may be relevant, depending on the course and location.

#### At river/project level - pace dictated by geographic spread of rivers adopted

On an ad hoc basis funding priorities may also include involvement with an actual project:

- Assistance with project implementation on projects of general concern
- Project evaluation
- Procurement of short term technical expertise
- Monitoring/Sharing data
- Problems with enforcement
- Finding regional or local patrons

Requests for specialised monitoring cannot be supported from the national budget, but would be referred to the directorate Resource Quality Services who is custodian of the national aquatic ecosystem health monitoring programmes.

Applications by river care teams for funding may be submitted, as follows:

The budget for the national programme does *not* include operating expenses to rehabilitate individual rivers. Assistance can therefore not be provided with seed funding to assist any project, unless it has regional significance as prescribed by delegated authorities.

It may be possible to provide support for project teams with finding their own sponsors. This assistance will depend on the merits of each case. Please submit supporting evidence of the objectives of the rehabilitation project, the time span, the resources and experience that are on board, the history and a description of the specific assistance needed to:

The National Programme Co-ordinator of Adopt-a-River Private Bag X313 Pretoria 0001

#### 4. LEADERSHIP AND STRUCTURE OF THE PROGRAMME

National Coordinator	A full time National Coordinator champions the Adopt-a-River programme and coordinates all activities of an Adopt-a-River nature across the country.  Partnerships are required between authorities, agencies, concerned community organisations and the citizens.
Regional Coordinator	The work load will dictate the pace at which Regional Coordinators will be appointed. Regional Coordinators will only be appointed in a province or catchment management area if sufficient rivers have been adopted to justify it.

**Note:** Co-ordinating the Adopt-a-River initiatives to achieve sustainable results on a national scale is a formidable task. There is no single institution in South Africa with the capacity to host and implement the programme nationally; therefore it will be necessary to form partnerships between authorities, agencies, concerned community organisations and the public, to be able to adequately fulfil the roles involved in adopting rivers.

This programme has a full time national programme manager who champions the Adopt-a-River programme and co-ordinates all activities of an Adopt-a-River nature across the country. At the onset this person will perform administrative functions, and support staff will subsequently be added as the need arises. The first pilot rivers are nationally co-ordinated by the National Co-ordinator, assisted by a progressively growing centralised team, until such time as the intermediate layers in the structure are warranted by the number of adopted rivers that have to be co-ordinated by the team. The work load will dictate the pace at which staff will be appointed to the programme at national and subsequent regional levels. What this means is that until several rivers in close proximity in one province or catchment management area have been adopted, there will be no provincial or regional layers in the structure.

The need for this Adopt-a-River programme was identified in parliament through the then Chairperson of the Portfolio Committee. The then Department of Water Affairs and Forestry was appointed to champion the design phases of the programme, but now that the programme is functional, it spans several departments and jurisdictions. The Departments of Water Affairs, of Environmental Affairs, of Trade and Industry, of Agriculture, and their respective provincial; departments, as well as research groups, numerous conservation agencies and project teams are already in many instances working together in a synergistic manner on river corridors.

The then Department of Water Affairs and Forestry, who has championed the design phases of Adopt-a-River, will continue as programme host. The national co-ordinator or implementer agency has to be in a position to support the national programme with additional capacity from the pilot stage. The Working for Water arm of the Department of Water and Environmental Affairs indicated willingness and ability to mobilise the first pilot projects.

The DWA Regional offices in their current form cannot perform the additional workload from the Adopt-a-River initiative. To launch and sustain this programme in the regions need much more implementing capacity than available from existing institutions alongside their normal duties

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Mr Nelson Mandela is the Patron in Chief of Working for Water, and therefore also of Adopt-a-River under this arrangement.

The contact person for strategic guidance of the programme is the Chief Director: Water Resource Information Management, within Policy and Regulation. (Tel 012 336 7500)

# 5. RESOURCES AVAILABLE FROM CO-ORDINATOR (INITIALLY AT NATIONAL LEVEL)

**Support** Marketing expertise and resources to attract patrons

provided by the Links to related organisations and programmes

National Awareness creation

**Coordinator** Network of professional trainers and facilitators

Tailor made training curricula for participants
Access to training facilities or on-side training

Monitoring and feedback about Adopt-a-River type activities Mechanisms to facilitate the sharing of knowledge and experience

Certificates to validate learning and achieved results

Legal advice and labour contracts
The Adopt-a-River website

Data repository and information management service

#### 5.1 MARKETING EXPERTISE AND RESOURCES TO ATTRACT PATRONS

The Adopt-a-River national co-ordinator is the champion of the Adopt-a-River programme, who will have the necessary marketing expertise and resources to promote the aims of the programme at a national and regional level. The co-ordinator will canvass patrons to the programme who, in turn can provide high visibility, resource material or moral support to the programme.

#### 5.2 LINKS WITH RELATED ORGANISATIONS AND PROGRAMMES

The co-ordinator will facilitate the establishment of a network of organisations and programmes that are involved in Adopt-a-River type of activities. This is to create a platform for the exchange of ideas, lessons, good practice and to avoid duplication of effort.

#### 5.3 AWARENESS CREATION

The co-ordinator will establish a campaign to create and sustain awareness of the Adopt-a-River programme, its objectives, and links to local initiatives that are aligned with the objectives of the programme. National awareness campaigns like WASH, Working for Water and DWA 2020 Vision already have communication channels that can probably be used for the purpose.

#### 5.4 PROFESSIONAL TRAINERS AND FACILITATORS

The national co-ordinator should establish a network of professional trainers, practitioners and facilitators who can be called upon to support Adopt-a-River activities in a specific region. Such a network already exists for the River Health Programme, the Water, Sanitation, and Hygiene for All (WASH), the Framework Programme for Research Education and Training in Water (FETWater) and Wildlife and Environment Society of South Africa (WESSA) and these can form the foundation for an Adopt-a-River trainer's network.

#### 5.5 TAILOR MADE TRAINING CURRICULUM

The Adopt-a-River Programme is aimed at involving communities in water corridor conservation and rehabilitation activities. Participants would probably comprise largely of people with little or no formal training in aquatic sciences. The co-ordinator needs to identify the training needs of participants and establish a portfolio of simple training courses to meet these needs. The Plastics Federation of South Africa, WESSA and DWA 2020 vision may be of assistance in this matter. As participants gain experience and knowledge they can attend more formal short courses such as those presented by the River Health Programme, WESSA or tertiary training institutions.

#### 5.6 TRAINING FACILITIES IF NECESSARY (OTHERWISE ON-SITE TRAINING)

It is preferable to take the simple training courses to participants as the need arises. However, the co-ordinator will collate training material in the form of presentations, booklets, visual aids, posters, etc. that can be used in training courses. Such material is already available from various sources (refer to the report on open source and other training material).

#### 5.7 MONITORING AND FEEDBACK

The co-ordinator will establish a mechanism to monitor the success of Adopt-a-River type activities in the country. This monitoring has two purposes, (1) to disseminate information about activities in a specific region to stakeholders such as existing or prospective patrons or participants, and (2) for reporting purposes to Departmental management.

Maintain volunteer interest and morale by ensuring that the programme as a whole is credible. A credible programme is one that incorporates regular review and analysis of procedures such as training which influence satisfaction and morale, as well as technical matters and data recording and reporting. Occasions when monitoring groups and water quality experts can meet, ask questions and enjoy being part of a catchment team, are invaluable. Use of newsletters, phone calls and easily understood and useable reports to keep the group informed of results, programme progress and events are vital. Improvement in water quality that results from river corridor activities must be publicised.

#### 5.8 MECHANISMS TO FACILITATE SHARING OF KNOWLEDGE AND EXPERIENCE

The co-ordinator has the responsibility to facilitate sharing and exchange of knowledge and experience amongst the community of Adopt-a-River participants and stakeholders. The following mechanisms will amongst others be established:

#### Resource centre

A physical and virtual resource centre will be established to support Adopt-a-River activities in South Africa. The physical resource centre would be the depository and distribution centre of hard copies of training and informational material, posters, CDs and DVDs. The virtual resource centre is the Adopt-a-River web site and is described in detail in the next section.

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#### Experts

The co-ordinator will invite a small group of domain experts to monitor the bulletin boards and discussion forums on the Adopt-a-River web site and where necessary, respond to queries raised by Adopt-a-River participants. Where funds allow, experts may be dispatched to assist Adopt-a-River teams on the ground. This group of experts has to be formally recognised for their contribution to the Adopt-a-River Programme.

#### Trouble shooting

The national Adopt-a-River co-ordinator will be available for assistance to troubleshoot specific problems or issues participants encounter during Adopt-a-River activities, especially at start up. Site visits by one of the central team members or trainers may be warranted on occasion. Payment or otherwise for any site visits have to be finalised during the implementation phase.

#### • Annual Adopt-a-River conference

It is recommended that an annual Adopt-a-River conference be arranged where participants, experts, patrons and co-ordinators can exchange experiences in a focused environment. Such a conference can be piggy-backed onto the annual or bi-annual conferences of the South African Society of Aquatic Scientists (SASAQS) or of the Water Institute of Southern Africa (WISA).

#### 5.9 CERTIFICATES TO VALIDATE LEARNING AND ACHIEVED RESULTS

The co-ordinator will establish an award and recognition system to acknowledge the training undertaken by participants, special effort by individuals to further the objectives of the Adopt-a-River Programme in a region, and to recognise the enthusiastic contributions of patrons.

Incentives such as training (enhancing future work opportunities), feedback on work well done, valuable use of the collected data or visible results from their efforts and acknowledgement of their contribution to their communities are important. The importance of a well-structured and co-ordinated approach in an Adopt-a-River programme cannot be over-emphasised

#### 5.10 LEGAL ADVICE AND LABOUR CONTRACTS

The Adopt-a-River web site will provide support to participants or local co-ordinators on legal matters. Such matters may be related to cases where participants are remunerated for their contribution to Adopt-a-River activities, or generic indemnity forms for volunteer monitors.

Institutions must be aware of legal responsibilities towards participants. Where there are no legal protective measures in place for people who are not employed by an institution, any volunteers should be informed accordingly.

More development work needs to be done to better quantify risks and liabilities that Adopt-a-River teams may incur.

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#### 5.11 THE ADOPT-A-RIVER WEBSITE

The interactive website is the access point and communication channel for general users. The user needs a computer with Internet access and web browser, no software installation or registration costs.

The site contains:

#### Home page (Central access or starting point)

Clearly directs user to which information is available where (focus on site usability)

#### About us

Describes the Adopt-A-River Programme in terms of its

- Vision and mission
- Aims and objectives
- Background/history
- Current projects/initiatives
- Rules/code of conduct
- Structure and staff (e.g. organogram with contact details)

#### Become involved/Register

Note: In order to propagate awareness creation and ease of access by users, and considering the sensitive nature of contact details, the bulk of information (e.g. policy, project profiles, training material, etc) is available without the need to register (or input of a username/password). Registration is a prerequisite only for on-line discussions, loading data and resource documentation, and for requests to obtain information and assistance.

Should you wish for your organisation to appear on our list of stakeholders who actively participate in conserving the status of water bodies in South Africa, it is recommended that you register the organisation and ideally the name of an individual who serves as contact point with the organisation.

This section provides details on how to join or become involved with the initiative. There is no fee attached to registration.

This facility to register is optional (e.g. name, organisation, phone number/s, fax number, e-mail address) and requires login details (username and password) to be obtained.

It is not necessary to register if you want to view information and learn from other initiatives, but in order to contribute to the website, registration (username and password) is needed. However, this development will take time to set up and will be in close co-operation with the DWA.

#### Programmes, Projects and Initiatives

Information posted from different sources, amongst others by teams who successfully adopted their own stretches of rivers

- List of active programmes
- Initiatives in the pipe line at National Co-ordinator level
- Past successes
- Sharing of news on new developments

#### • Educational tools (e.g. for newly established groups– especially lay persons)

- Pointers on starting up an interest group or group related to adopting a river
- Guidance related to resource requirements
- Reference to resources available at national level from the programme coordinator, or elsewhere
- Examples of objectives that have been pursued with adopting rivers
- Background on creating awareness with a view to behaviour change
- A spectrum of technical guidelines related to the actual activities in which to engage at river corridor level (e.g. clearing invasive plants, removing litter, identifying invertebrate species, collecting samples, clearing debris)
- Pitfalls that can be encountered when adopting rivers
- Case studies

#### • Training material/modules

Experts can be sourced for training either at the national resource centre or at the river corridor.

- Need for training of this nature is spelt out level of involvement
- Details are contained here on the costs involved, where relevant, dates, delegates, accommodation arrangements
- Course contents
- Printed or other material
- References
- Expected outcomes

#### Library

Interesting current information or archived information

- Newsletters
- Press releases
- Photo gallery
- Experts who can be contacted where funds allow
- Summary maps

#### Maps showing river reaches adopted

Including contact details of an individual in each river corridor

#### • Frequently asked questions (FAQs)

List of queries that regularly surface, as well as answers to those (by practitioners and perhaps moderated by others)

#### • Handling of on-line queries (only available to registered users)

At the onset of the programme the national co-ordinator acts as central mechanism for information sharing.

This individual and later the central team will tend to gueries related to

- river information, historical water issues and conflicts
- resources potentially available
- training
- case studies and success stories
- printed information
- expert assistance
- data repository

The target response time for routine queries received on the web site is 24 working hours, or at least an apology within that time, to provide an expected delivery time and progress summary.

References to other maybe more specific resources also will be provided within 24 working hours, where at all feasible.

A non-routine query will be acknowledged within 24 working hours. Where immediate response is not viable, or where further information is required, this will be communicated at this time to the party who asked for assistance.

#### • Discussion forum (only available to registered users)

This mechanism is partly aimed at involving users in keeping the website relevant. Needs of programme co-ordinators, volunteers, workers, etc can hopefully be accommodated in this manner.

- Current and archived discussions of interest or controversy
- Feedback on usefulness of materials in practice
- Suggestions on avenues to pursue
- Lessons learnt

#### Upcoming events

- Workshops, meetings, calendar etc.
- Competitions
- Friendly challenges to involve different interest groups

#### 5.12 DATA REPOSITORY AND INFORMATION MANAGEMENT

The above website essentially acts as a document repository promoting awareness (e.g. provision of protocols, procedures, guidelines, methodologies/techniques and other training material related to establishing and managing river care programme).

A possible future requirement is the need for an information management system. The information management system allows users to both load river water quality related data (e.g. stakeholders load on-site observations) and to view river water quality related data. In order to implement an appropriate system, consideration will need to be given to operating system used (e.g. Microsoft Windows, Linux), database used (e.g. MySQL, Oracle), programming language used (e.g. Python, XML, C++) and web server used (e.g. Apache). The most appropriate components to be utilised will depend on the desired needs of the system, costs and available expertise. In addition, aspects such as security and access, data storage, desired data accuracy, data integrity, data credibility, required data use, user training, etc will require careful consideration.

Prior to implementation an appropriate specification will be developed with the users needs in mind. Aspects that will be investigated are the following:

- The system should require no or little development time
- The system should be robust, reliable, easy to use and proven system
- The system should be up and running in a very short time period
- The system should be aligned with DWA and water sector initiatives
- Ideally, to use the system one only needs a computer with Internet access & web browser (think on-line banking, no software installation, automatic updates)
- The system should allow users to connect to data from anywhere (remote facilities/offices, staff that are travelling, stakeholders, etc)
- A team should be available to provide on-going system support (training, maintenance, etc)
- The system is housed in a secure data centre with regular back-ups
- The system is up-to-date with latest water quality standards, guidelines and related legislation
- Collaboration with/benefit from other water sector related developments
- As far as possible trial the system before implementation (i.e. no loss of capital (development/ software purchase) if needs not met).

#### 6. LINKS WITH NATIONAL CAMPAIGNS

Department of Water Affairs	The Adopt-a-River programme spans several departments and jurisdictions. The DWA, as programme host, and its National Coordinator are tasked with integrating efforts of the various players in one geographic area.
Working with other initiatives	The Adopt-a-River Programme would benefit from working with other environmental programmes that have a proven track record, e.g. Working for Water or Adopt-a-Beach
Training network	Training of coordinators and participants critical for participant competency. Unemployed also view training as opportunity for later formal employment. Many organisations are involved in presenting formal and informal training courses and have ready access to training resources and toolkits. These should be drawn into a loose network of trainers to support the Adopt-a- River programme.

The Adopt-a-River programme spans several departments and jurisdictions, as discussed before. The Departments of Water Affairs, of Environmental Affairs, of Trade and Industry, of Agriculture, as well as research groups and numerous conservation agencies, have active programmes, some of which on river corridors. To ensure that programmes remain congruent with policy, it is important to forge at least communication links between national programmes of different departments, failing which opposing objectives may exist on adjacent projects on the ground.

The Department of Water and Environmental Affairs, as programme host, and its national coordinator or implementer agency are tasked with integrating efforts of the various players in one geographic area. DWA Communications has been closely involved with the advocacy and awareness components of the programme from the onset.

The Adopt-a-River Programme would in turn benefit from working with other initiatives that have a proven track record on environmental programmes that involve the users. Working for Water (a Division in DWA), WESSA and the Plastics Federation of South Africa have amongst others offered to be involved in the pilot phase and to make available their expertise and structures. The communication avenues of the WASH programme are potentially open to be used for Adopt-a-River. Behaviour change namely plays a significant role in preserving and protecting the natural resources in general, and water resources in specific. It is equally important that people on the river corridor receive what to them amount to real benefits from the programme. Long-term and higher order needs for example do not at all feature for people who live at the subsistence level.

The experience and resources of Working for Water will achieve great synergy in natural resource management and may concurrently meet objectives of social upliftment. Official links are also being formed with environmental awareness programmes of the Plastics Federation of South Africa (e.g. PETCO, PSPC, Buyisa-e-bag and Environment, even a fashion parade where recycled plastic was the material of choice for garments!)<sup>4</sup>, the Wildlife and Environment Society

www.plasticsinfo.co.za

of South Africa (WESSA) and established Friends of... groups. Resources from Men on the Side of the Road would potentially be available to assist with manual tasks.

Training of both resource managers and the lay public is critical for participant competency. Training is also perceived by school leavers as an opportunity to later get into formal employment. Accredited and certified training modules and useful and applicable literature on the conservancy of natural resources are readily available in many organisations<sup>5</sup>. Universities, the Water Research Commission, the CSIR, government partnerships such as FETWater and conservation agencies like WESSA<sup>6</sup> are providers of training courses, printed resources and toolkits across a vast range of topics in the natural environment<sup>7</sup>. Capacity building for workers and volunteers strengthens any partnership activities and will improve sustainability of individual and collective initiatives of the partners.

Candidate rivers to pilot the programme have been carefully selected – river reaches were identified where the capacity already exists to test those parameters which will shape the future of the programme. The programme therefore kickstarts with rivers where behaviour change by the public on the river banks will make a visible positive difference in a short time span, once the people have been sensitised to the link between their actions and the state of the river downstream.

The river reaches in the pilot study have been identified as the first candidates for piloting Adopt-a-River implementation, congruent with the objectives of awareness and behaviour change and visible outcomes in a reasonable period.

Complex situations, where pollution by industry and farming or serious competition exists for resources, would be added to the programme once it is fully fledged.

<sup>&</sup>lt;sup>5</sup> Comprehensive reference list appended to the Study report for Phase 2 of Adopt-a-River

WESSA Share-net is a collaborative venture between WESSA, KZN Wildlife, Rhodes University to produce copyright free SA resource materials

Eg. WESSA Wetland Alliance for Training, Education and Research (W.A.T.E.R.) library

#### 7. AWARENESS CREATION

Awareness creation is a key objective	The Adopt-a-River programme aims to create awareness of IWRM and encouraging community involvement in water resource management and protection.  Various activities have been identified to promote community involvement.
Stakeholders communication	The programme needs to communicate with a wide range of stakeholders. Information needs to be tailored to the needs of target stakeholder groups.
Communication support	The report on communication structures provides a good overview of media that can be employed to effectively communicate information on Adopt-a-River activities.

The aim of the Adopt-a-River Programme is to create an understanding among stakeholders of the concepts of integrated water resource management and to encourage them to become actively involved in the protection and management of these water resources. For this reason, the Adopt-a-River Programme includes a range of activities, such as water quality monitoring, clean-up campaigns, land-use practises and alien plant eradication amongst others, which promote an integrated management of the nation's water resources.

The Adopt-a-River Programme includes a broad range of stakeholders, ranging from the scientific community, national and local government, water resource managers and planners, elected officials and the general public. These stakeholders will make use of the information generated by the Adopt-a-River Programme or they will use it to encourage action to be taken. Thus effective communication to this diverse group of stakeholders will not only depend on the nature of the information received, but also the manner in which it is disseminated. It is therefore necessary to tailor the information in such a way that it is specific to the needs of the targeted stakeholder group to ensure that it is understood and relevant.

The report entitled *Communication Structures* provides an overview of communication skills and media which can be used to effectively communicate information on activities promoted by the Adopt-a-River Programme, such as water quality monitoring results, river clean-up campaigns and alien plant eradication. The report also provides guidance to the National and Regional Coordinators in effective sharing of information to the diverse group stakeholders involved with the Adopt-a-River Programme in a manner that generates continued support and interest. It should be noted that the report will also be of value to the Adopt-a-River participants to enable them to communicate effectively with their stakeholders.

The purpose of the report was to highlight the different information requirements of the various stakeholders and how best to disseminate the information in a way that increases the chances that the message being communicated gets across clearly to the right people. The report provides an introduction to effective communication skills and a review of different communication media such as email communication, field days, newsletters, posters, radio and television. The report also identifies the potential stakeholders for the national, regional and local co-ordinators and recommends appropriate media that can be used by them to communicate with their stakeholders.

#### 8. AVAILABLE TRAINING MATERIALS

Training	The report includes a guide on how to set up a training course as well as details of
material and	training courses available in South Africa.
needs report	
Bibliography to training	A bibliography was compiled of training - and awareness creation material that was collected during the execution of the project.
material	The bibliography includes key Internet web sites that are devoted to volunteer monitoring.

Effective training of volunteers is critical for volunteer competency and satisfaction. Thus a well structured training programme and the dissemination of useful and applicable literature is required. There are many training programmes available locally through Universities or through government partnerships, such as FETWater. Training can also be done out in the field, where a particular activity is demonstrated.

The report entitled *Training Material and Training Needs*, includes a guide on how to set up a training course, details of training courses available in South Africa, and a bibliography of training material developed in South Africa and elsewhere in the world.

Volunteer training programmes strive to educate, motivate, and teach new skills, while developing a sense of loyalty and a positive relationship between the project co-ordinator (National or Regional Co-ordinator or the Local Group Leader) and the volunteers. The training course guidelines provide invaluable information that should be taken into consideration when planning and conducting a training course. Topics that have been covered in this section include "how to create a good training environment", "what makes and effective session" and "field training".

The bibliography was primarily sourced from documents available on the Internet. A "Google search" on volunteer water quality monitoring programmes resulted in some 640 000 hits, indicating that there is a significant amount of information available on the Internet. The documents that have been included in this bibliography have been reviewed to ensure that they are applicable and produced by a reliable source. Organisations such as WESSA have an extensive collection of material in their Wetland Alliance for Training, Education and Research (W.A.T.E.R.) library. These can be sourced from them by Adopt-a-River co-ordinators. Recommendations were also made about training courses and material that should be developed to support volunteer monitoring in South Africa. The River Health Programme established by DWAE developed appropriate assessment tools for use by aquatic and terrestrial scientists. However, these tools are inappropriate for non-scientists (i.e. most volunteers). The protocol for assessing the health of a river using aquatic invertebrates (SASS) was simplified for use by non-scientists (mini-SASS). It was recommended that similar simplifications be undertaken for the protocols used to assess fish health, water quality, riparian vegetation, and the geomorphological state of a river.

#### 9. MONITORING MANUALS

Volunteer	This manual provides guidance to the national and regional coordinators who will
monitoring	have the responsibility of coordinating and supporting the activities of volunteer
coordinator's	monitors.
manual	The manual can also be used by local team leaders.
Sampling	A simple manual that con be used by members of the public to monitor the state of a
manual for	river, reservoir or urban pond in their area.
volunteers	The manual describes basic monitoring procedures required for water quality
	monitoring in rivers and reservoirs.

#### 9.1 VOLUNTEER MONITORING CO-ORDINATOR'S MANUAL

Involving communities in volunteer monitoring programmes was viewed as one mechanism through which citizens could learn about rivers and reservoirs and become involved in the protection and management of these water bodies in their particular area. One of the objectives of Phase 2 of the Adopt-a-River programme was therefore to provide support for such activities by developing a simple manual for those tasked with co-ordinating the volunteer monitoring.

The purpose of the volunteer monitoring co-ordinator's manual, *Programme co-ordination manual for National and regional co-ordinators*, is to give guidance to the national and regional co-ordinators who will have the responsibility of co-ordinating and supporting the activities of volunteer monitors. The manual briefly describes the role of national and regional co-ordinators in volunteer monitoring, on compiling a database of stakeholders and/or interested and affected parties, getting started with a volunteer monitoring programme. It also describes briefly the reasons why people volunteer, planning a volunteer monitoring programme, issues related to the provision of credible data and information, cost and funding of the programme, and how the monitoring should be carried out.

#### 9.2 SAMPLING MANUAL FOR VOLUNTEERS

A simple manual, *Adopt-a-River Manual for Volunteer Monitoring*, was developed for members of the public to monitor the state of a river, reservoir or urban pond in their area. This manual can be expanded at a later stage to include wetlands and reservoirs.

The manual provides a description of basic water monitoring procedures required for water quality monitoring in rivers and reservoirs. It also provides an introduction to monitoring and covers topics such as planning a monitoring programme, security and water safety, basic equipment, and general preparations and sampling procedures. The manual also describes simple monitoring techniques for visually assessing the state of a river or reservoir, procedures for collecting samples, and protocols for monitoring temperature, water clarity, dissolved oxygen, pH, and collecting samples for chemical and bacteriological analysis in a laboratory.

In addition, guidelines for the establishment of a volunteer monitoring programme are also included. These guidelines will assist in developing a monitoring programme that provides useful information that can be used by the Department of Water and Environmental Affairs (DWAE) and by the volunteers themselves to assess the current and potentially changing status of a water resource.

The manual is concluded with a section on reporting pollution incidents in urban and rural situations. In urban areas the local authority has the responsibility for dealing with pollution incidents. For pollution incidents that poses an imminent danger to human health, the environment or damage to property, should be reported to the national toll free emergency number (Tel: 107, Cell: 112). These call centres should route the call to the responsible local authority. Outside the boundaries of local authorities the DWA has responsibility for dealing with pollution incidents and these should be reported to the national toll free hotline (0800 200 200).

The purpose of the manual is to create awareness about the water resources (including rivers, streams and reservoirs) located close to volunteers and to get people involved in the monitoring and the protection of the water resources. The data collected through volunteer programmes will help water resource management initiatives, such as those established by the DWA, Catchment Management Agencies, Water User Associations, local authorities, and interest groups, to understand, promote and implement specific interventions.

#### 10. CONCLUDING REMARKS

Having discussed the background to the Adopt-a-River Programme, sources of funding, leadership and structures of the Programme, resources available from the national co-ordinator, links with other campaigns and awareness creation, one realises that there are many issues that need to be addressed in the implementation of the Adopt-a-River Programme, even during the pilot implementation phase. However, many tools already exist and have been written, such as existing training materials and monitoring manuals.

This manual is meant as the starting point of the next phase, to guide the pilot implementation of the Adopt-a-River Programme.

The manual will serve to keep the key principles for a sustainable Adopt-a-river Programme in mind during its pilot implementation phase and can be updated to incorporate the feedback from practitioners in the field for subsequent phases of the programme.