



Lower Orange River Management Plan

Unlocking the Ecotourism Potential of the River



Draft, October 2008

/Ai/Ais-Richtersveld
Transfrontier Park ~ Oorgrenspark ~ !Am //Aesa /Guru !Hânab
Joint Management Board ~ Gesamentlike Bestuursraad ~ /Hûbe-ra #Gae #Gui !Nâns



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/Ai/Ais-Richtersveld
Transfrontier Park ~ Oorgrenspark ~ !Am //Aesa /Guru !Hânab
Joint Management Board (JMB) ~ Gesamentlike Bestuursraad ~ /Hûbe-ra #Gae #Gui !Nâns

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ABBREVIATIONS/ACRONYMS

CEC:	Current Environmental Character
AFNP:	Augrabies Falls National Park
ANP:	Aussenkehr Nature Park
APA:	African Paddling Association
ARTP:	/Ai/Ais-Richtersveld Transfrontier Park
CDP:	Concept Development Plan
CPA:	Community Property Association
CPPP:	Community Public Private Partnership
DEAT:	Department of Environmental Affairs and Tourism
DTEC:	Department Tourism Environment and Conservation
DWAF	Department of Water Affairs and Forestry
GFRCC:	Greater Fish River Canyon Complex
ICDP:	Integrated Conservation and Development Plan
ICP:	Initial Concept Proposal
JMB:	Joint Management Plan
KPA:	Key Performance Area
LOR:	Lower Orange River
LORMP:	Lower Orange River Management Plan
MET:	Ministry of Environment and Tourism
NNR:	Nababeep Nature Reserve
NWA:	National Water Act
ORASECOM	Orange-Senqu River Commission
ORM:	Orange River Mouth
ORMNR:	Orange River Mouth Nature Reserve
ORMTRS:	Orange River Mouth Transfrontier Ramsar Site
PPP:	Public Private Partnership
PWC:	Permanent Water Commission
RNP:	Richtersveld National Park
SADC:	Southern African Development Community
SANParks:	South African National Parks

SAQA: South African Qualifications Authority
TFCA: Transfrontier Conservation Area
THETA: Tourism and Hospitality Education and Training Authority
WCS: Wilderness Camp Site
WHS: World Heritage Site

CONTENT SUMMARY

The Lower Orange River Management Plan (LORMP) consists of 4 main sections:

- *An Introduction* (Section 1);
- *The Place* (Section 2);
- *The People* (Section 3); and,
- *The Plan* (Section 4).

In the *Introduction*-

- *Subsection 1.1* addresses the purpose and aim of the document aimed at unlocking the ecotourism potential of the river, and provides insight into the motivational factors that prompted the need to compile the plan, and the principles on which the planning took place;
- *Subsection 1.2* discusses the project scope, specifically the viewshed that defines the shared resource area, the target area for the proposed Transfrontier Conservation Area (TFCA) within the Lower Orange River area, the three clusters and the twelve river (12) sections within which the planning takes place; and,
- *Subsection 1.3* provides insight into the participatory planning process utilised to ensure active stakeholder engagement, within geographic as well as specific communities of interest.

In *The Place*-

- *Subsection 2.1* addresses the biophysical parameters which influence the initiatives to unlock the ecotourism potential of the river including, inter alia, geology and geomorphology, elevation, slope, river landscapes, riverine and riparian, as well as terrestrial ecology, climate, hydrology and water quality;
- *Subsection 2.2* discusses aspects related to the cultural environment within which the planning is taking place, and well as the need to protect and conserve elements of the endemic cultural heritage resources;
- *Subsection 2.3* provides insight into the business environment within which the planning is taking place, specifically illustrating aspects such as mining, agriculture, and the existing river based tourism operations and how they detract from, or contribute to high quality ecotourism development;
- *Subsection 2.4* discusses the tenure environment, addressing aspects such as landownership, restitution and utilisation rights with the two countries; and,
- *Subsection 2.5* addresses the governance environment within which the planning has taken place, providing insight into aspects such as demographics, the legal framework from an international and country specific perspective, specifically focusing on aspects such as transfrontier conservation and water resource management and border demarcation, current institutional arrangements and structures between Namibia and South Africa, and the context of this river planning initiative within broader conservation and water management planning initiatives.

In *The People*-

- *Subsection 3.1* identifies the stakeholders who have a role to play in attaining the objectives as envisaged for the area; and,
- *Subsection 3.2* summarises the needs and expectations of the various communities of interest participating in the planning process.

In 'The Plan'-

- *Subsection 4.1* addresses the overall and specific management objectives as envisaged for the area;
- *Subsection 4.2* provides insight into the process used to compile the Concept Master Plan, addressing aspects such as the current environmental character, based on the existing audio-visual intrusions, and the impact that the planning parameters will have on this character, culminating in a future desired state;
- *Subsection 4.3* provides details for each river section addressing the Integrated Concept Proposals, the environmental sensitivities affecting the concept, and Concept Development Plans and details for each of the 12 river sections;
- *Subsection 4.4* proposes an Operational Framework based on process based management system principles, for addressing the action projects identified during this planning process and the detailed planning of each river section; and,
- *Subsection 4.5* proposes an institutional model for managing the relationship between the various role players and stakeholders affected by the LORMP.

"We never know the worth of water until the well is dry."

Thomas Fuller

INTRODUCTION



1 INTRODUCTION

Within this section of the LORMP, the following is addressed:

- *Subsection 1.1* addresses the purpose and aim of the document aimed at unlocking the ecotourism potential of the river, and provides insight into the motivational factors that prompted the need to compile the plan, and the principles on which the planning took place;
- *Subsection 1.2* discusses the project scope, specifically the viewshed that defines the shared resource area, the target area for the proposed Transfrontier Conservation Area (TFCA) within the Lower Orange River (LOR) area, the three clusters and the twelve river sections within which the planning takes place; and,
- *Subsection 1.3* provides insight into the participatory planning process utilized to ensure active stakeholder engagement, within geographic as well as specific communities of interest.

1.1 PURPOSE AND AIM OF DOCUMENT

Emanating from the collective need identified within /Ai/Ais-Richtersveld Transfrontier Park (ARTP) Joint Management Board (JMB), thorough the Water Resource Management Working Group, for a plan to specifically address the river as a shared economic driver within the region, it was decided to compile the Lower Orange River Management Plan (LORMP). It was envisaged that by unlocking the ecotourism potential of the river substantial opportunities for benefits would be provided to the region in a sustainable and equitable manner.

Additionally, to ensure judicious, sustainable and co-ordinated management, protection and utilisation of the LOR and to advance the Southern African Development Community (SADC) agenda of regional integration and poverty alleviation, it was imperative that an integrated river management plan for the river and associated aquatic environment be compiled and implemented, acceptable to all stakeholders based on their distinctive needs and requirements.

The recreational use of the LOR has gained in intensity over the past twenty years. The rafting and canoeing industry in this remote area has developed into an extremely popular experience – with no real restrictions. At peak seasons thousands of paddlers camp in base camps on both sides of the river – at present a nightmare for immigration authorities. Mining and tourism has opened up long stretches of river front. Goat grazing and bush burning by herders adds to the problem. The environmental impact of all this progressive use is clearly seen in the state of the highly endangered and unique riverine bush. .

Since 1994 the LOR has become a sensitive disputed borderline between two friendly countries. A more intensive management strategy to facilitate stakeholder involvement is now of essence. The implementation of the aims and principles contained in relevant protocols such as the SADC Revised Protocol on Shared Watercourses and the SADC Regional Water Policy in respect of joint planning should form the point of departure of any initiative, guiding and advising on planning with regards to river management and use.

The LOR is a unique feature of this arid region and is seen as a linear oasis playing an important role in biodiversity and aquatic ecosystem maintenance and water-based tourism. Management of these aspects of the LOR, and specifically within the ARTP is regarded as a joint function and responsibility of the JMB established for the ARTP and has been included as a key performance area in the Joint Management Plan (JMP) of the JMB, a mandate that stems from several articles in the Treaty that guides the JMB in their activities.

The project to compile a RMP for the LOR through the ARTP and specifically address the objectives as contained in the terms of reference is a concerted effort from the JMB to implement the requirements of its JMP and address the impacts of current use and form part of a proposed phased approach to develop a comprehensive RMP for the entire LOR as the transfrontier conservation initiative expands.

LORMP serves as a planned measure for managing the **contact zone** (i.e. the river as joint resource) between Namibia and South Africa, i.e.

- unlocking the **ecotourism** potential of the LOR from Augrabies Falls to the Orange River Mouth; and,
- addressing **conservation** imperatives forming part of the TFCA drive.

The main motivational factors that prompted the need to compile a LORMP include:

- the LOR is a unique feature of the ARTP, however, its conservation and economic value of is threatened by uncontrolled use and lack of clear management guidelines;
- the water resource is a shared resource and is subject to SADC protocol and policy that promote co-ordinated and integrated environmentally sound development and management as well as harmonisation of legislation and policies;
- the water resource is used for water based tourism and water quality impacts by upstream users can impact negatively on this;
- that there are significant opportunities for benefit flow to the communities that host the resource, communities that currently experience difficulties in accessing the water-based economy of the resource; and,
- the need for clarity regarding institutional relationships will significantly contribute to participation and beneficiation of relevant stakeholders.

The aim of the LORMP is to ensure the sustainable and equitable development, utilisation and management of the LOR by meeting the imperatives of the ARTP Treaty and JMP, the SADC Protocol on Shared Watercourses, and SA's 2010 Soccer World Cup undertakings for sharing tourism benefits with neighbouring SADC countries. Specific objectives to be achieved include:

- maximising the value and benefits which may arise from the ARTP and LOR;
- resolving any issues of potential conflict;
- achieving inter-state collaboration in the conservation of transboundary eco-systems and their associated biodiversity, promoting cross-border tourism and sustainable use and development of natural and human resources to improve the quality of life of the peoples of Namibia and South Africa;
- promoting alliances in the management of natural and cultural resources by encouraging social, economic, responsible tourism and other partnerships between the Parties, including the private sector, local communities and non-governmental organisations;
- developing trans-border eco-tourism as a means of fostering regional socio-economic development;
- sustainable development and sustainable use requiring the integration of social, economic and environmental factors in planning, implementation and evaluation to ensure that development and use services present and future generations;
- promoting equitable and effective participation by local communities; and,
- accountability to community interests, transparency and access to relevant information use.

In compiling the RMP, the principles contained in the SADC Revised Protocol on Shared Watercourses have been applied, as well as the following, that:

- planning should take cognisance of all relevant factors and circumstances including:
 - TFCA drive;
 - geographical, hydrographical, hydrological, climatic, ecological and other factors of a natural character;
 - the social, economic and environmental needs of the stakeholders concerned;
 - existing and potential uses of the watercourse;
 - conservation, protection, development and economy of use of the resources of the shared watercourse and the costs of measures taken to that effect;
 - current resource utilisation impacts; and,
 - the availability of alternatives, of comparable value, to a particular planned or existing use.
- recreation and tourism are recognised as legitimate users of water either consumptive or non-consumptive and need to be allocated water at all levels;
- the focus must be on integrated, people-centred planning;

- planning should be undertaken in a holistic and integrated manner, with the involvement of all stakeholders to achieve equitable and effective utilisation;
- planning should be based on the principles of Integrated Water Resource Management and shall take cognisance of the cross-cutting nature of water;
- planning shall be based on a participatory approach, with effective involvement of all stakeholders;
- all stakeholders shall be empowered to effectively participate in the planning of the resource; and,
- women are recognised as playing a central role in the provision, management and safeguarding of water and shall be fully involved in the planning process.

Numerous opportunities to specifically address poverty through a broadening of alternative livelihoods were identified by stakeholders, as was the need for capacitation and empowerment to increase employment options in the region. These opportunities are directly in line with the SADC Water strategies, as well as the outcomes of the discussions with stakeholders both collectively and individually.

Defining ecotourism as “*an interactive, participatory, and enlightening travel experience, to environments, both natural and cultural, that ensures the sustainable use, at appropriate levels, of environmental resources and, while producing viable economic opportunities for the tourism industry and host community, makes the use of these resources through sound environmental management beneficial to all tourism role players*” (Bewsher, 1999), provides the fundamental principles on which attempts to unlock the ecotourism potential of the LOR should be based.

Firstly, it is a travel experience that provides opportunity for guests to interact with guides and local people, participate in activities such as canoeing, rafting, kayaking, fishing and bird watching, and through these interactive and participatory activities gain insight into the unique natural and cultural features of the region and become enlightened.

Secondly, the travel experience should produce viable economic opportunities for both the tourism industry and host communities, by utilising innovative partnership and financing models which ensure maximum equity for the host communities without exposing these communities to any unnecessary or undue risks. These risks should resort with the tourism industry, which through their experience and skills can accommodate these as part of their operational procedures.

Thirdly, the design and operation of tourism experiences must be based on the environmental sensitivities that are inherent to the resources within a specific area, including, *inter alia*, biophysical, cultural social, economic, and political.

Finally, equitable benefits must accrue to all the role players within an area, and not just to any single sector. To ensure that this can be attained, it is critical that benefit flow mechanisms are discussed and agreed to prior to finalising agreements between all the affected parties, not just between the landowners and operators, but also with the resource managers and host communities.

As a region blessed with abundant natural and cultural resources, often of international significance, it is critical that any tourism products enhance the integrity of the resource, and not detract from the inherent value of these resources. This can be done through the use of environmental management strategies, programmes and plans, based on international best practices, yet adapted to local conditions.

The existing white water rafting, canoeing and kayaking operations along the LOR provide the platform on which the river utilisation can be based. To regulate and control this use, it is recommended that the various river sections be managed as concessions, enabling formalised relationships between the host community, resource management authorities, and river industry to be established. These formalised relationships can then be used as mechanisms to provide benefits to all the role players in an equitable manner.

Many of the concepts which underlie the success of this plan, and the potential success of the proposed TFCA within the LOR area, are complex, necessitating innovative techniques to ensure active stakeholder participation throughout the planning process. These include a strong emphasis on individual rather than collective engagement, and focus on communities of interest rather than geographic areas.

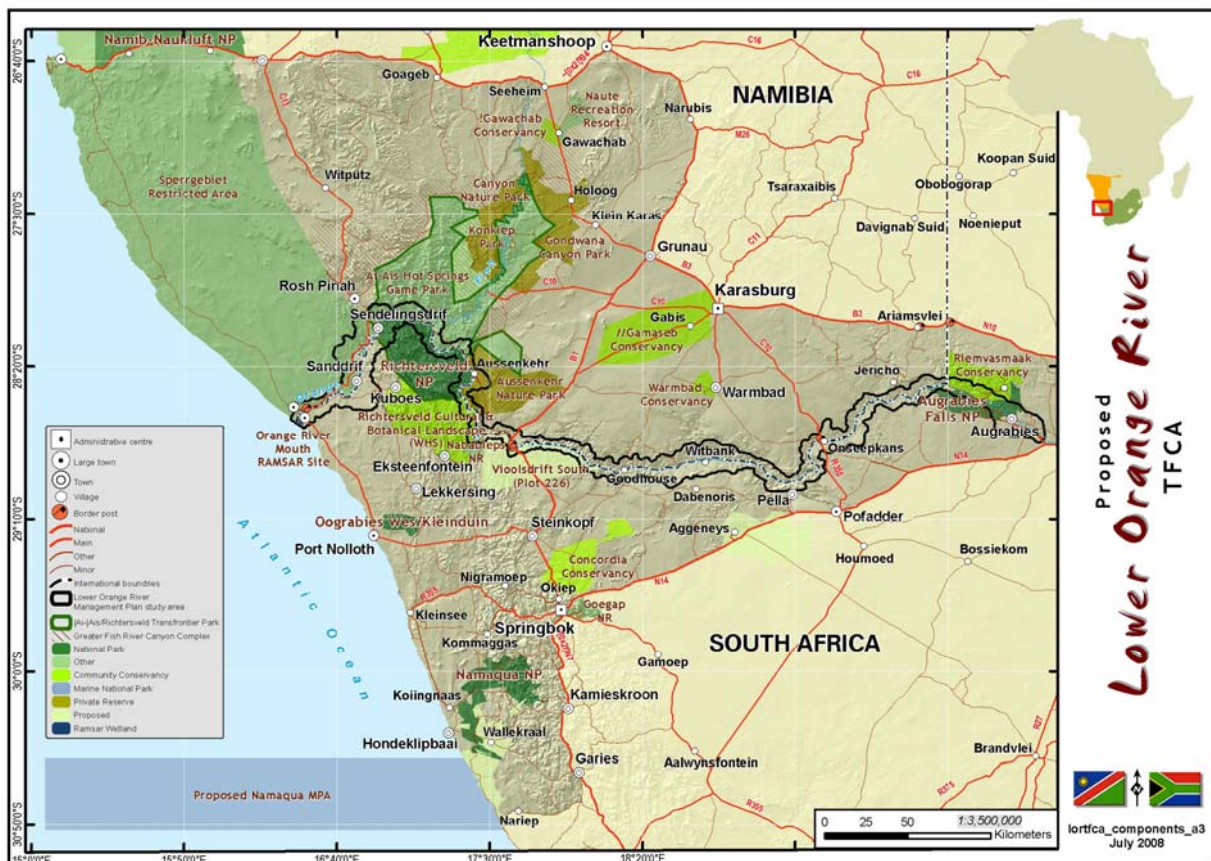
1.2 PROJECT SCOPE

Unlocking the ecotourism potential of the LOR is a complex task addressing many aspects, not just the provision and description of potential tourism products. The scope of this report encompasses guidelines to ensure the protection, conservation and sustainable utilisation of natural and cultural resources of the region, the development of interactive, participatory and enlightening experiences for visitors, the creation of viable and sustainable investment and operational opportunities for the tourism industry, and the establishment of representative institutional relationships between relevant role players to ensure that the resources remain protected, that the industry that uses these resources remains viable and accountable, that the guest experience remains at an internationally acceptable level, and the governance issues are transparent and accountable.

Throughout this document, these diverse issues will be addressed in a coordinated manner, either separately or collectively, whichever is most relevant, and wherever feasible illustrated spatially. Throughout this plan, reference will be made to the broader Integrated Conservation Development Planning (ICDP) initiatives in both Namibia and South Africa, since these two initiatives provide the planning and institutional context for the LORMP.

The LOR is generally described as the area stretching from the Au-grabies Falls to the Orange River Mouth (ORM), and includes vegetation types from both the Nama Karoo and the Succulent Karoo. The river forms the lifeline within this arid zone, and has been used by human settlements for more than two millennia, and now forms the interface for transboundary conservation planning between the Republics of Namibia and South Africa.

The scope of the River Management Plan for the LOR stretches from the Au-grabies Falls to the ORM, mainly focusing on the viewshed, defined as the area visible on both sides of the river when at the river (refer Map 1).



Map 1: Lower Orange River Management Plan Study Area and Scope – Protected Areas

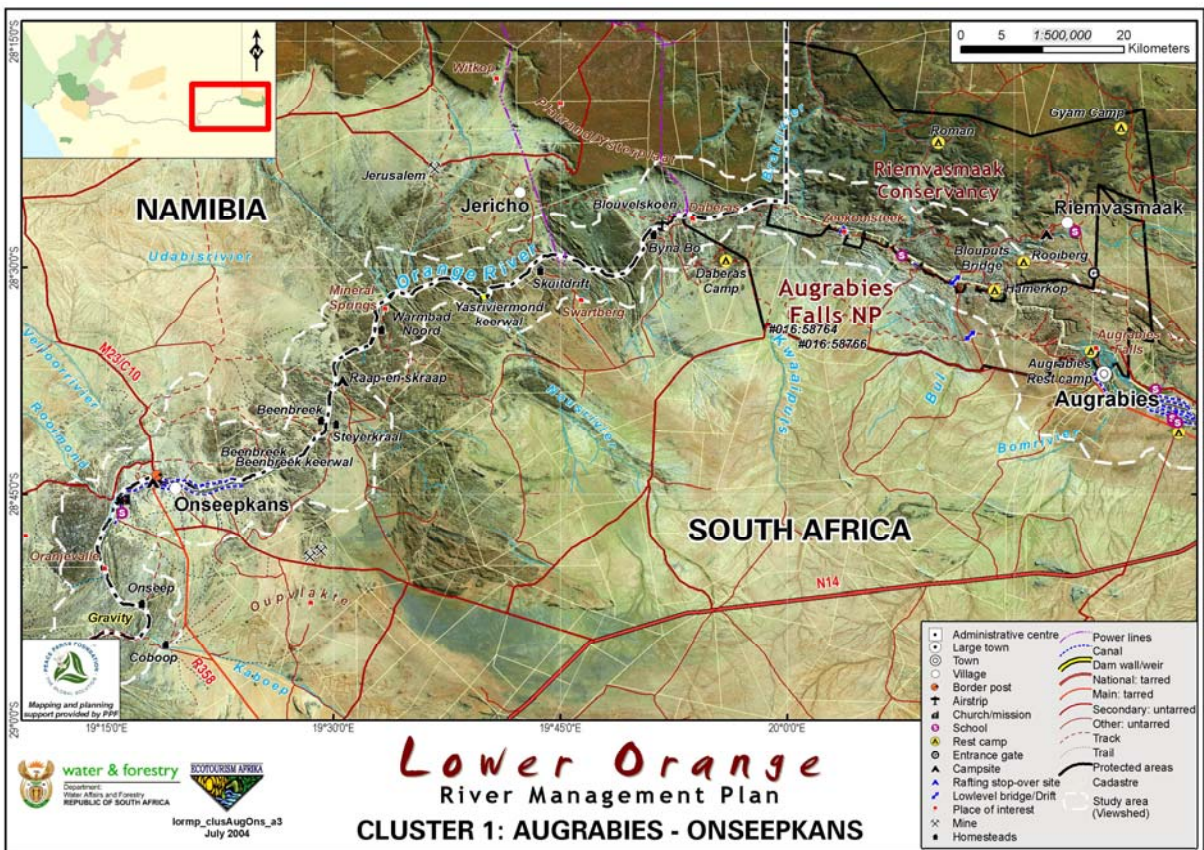
As the contact zone between Namibia and South Africa, the river is a shared resource, a resource that includes the entire viewshed from the river and not just the water and associated aquatic ecosystem, and this river section forms part of a wider conservation and development planning initiative within the two countries, aimed at establishing the entire area as a TFCA, stretching from Luderitz in the northwest to Augrabies Falls National Park (AFNP) in the east, and Namaqua National Park in the south, incorporating numerous formally proclaimed protected areas in both countries.

Broadly, the LOR can be divided into three sections with the first section being from the Augrabies Falls to Onseepkans, the second from Onseepkans to Noordoewer, and the third from Noordoewer to the ORM.

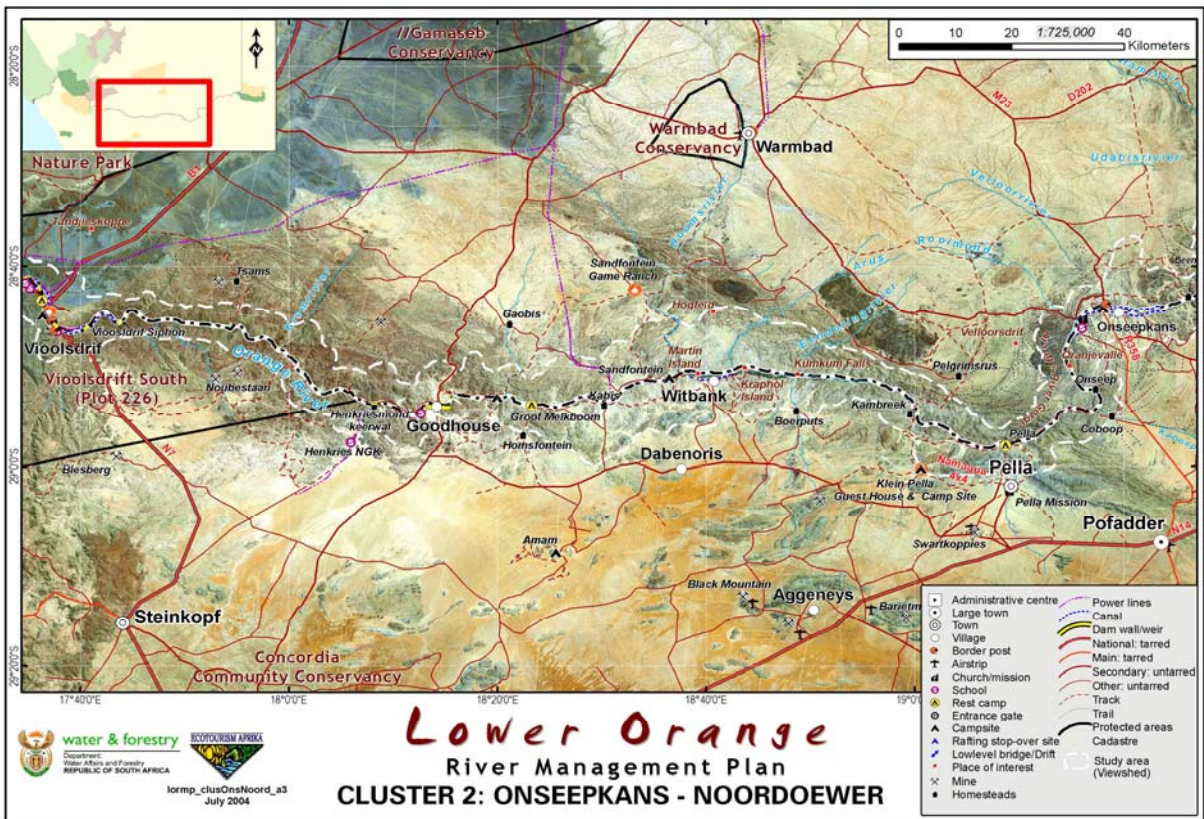
The first section (refer Map 2) is characterised by the erosional nick point created by the Augrabies Falls, resulting in an incised landscaped dominated by a table landscape on the northern side and Orange River Broken Veld on the southern side. This dramatic landscape, worthy of conservation, received some protection with the proclamation of the AFNP.

The second section (refer Map 3) is dominated by a superimposed landscaped, with the river carving its way through the mountains stretching from Pella to Warmbad, resulting in a deeply incised gorge. Due to the ruggedness of the terrain, human use of this area has been restricted to the few natural drifts along the river, linking the southern and northern banks.

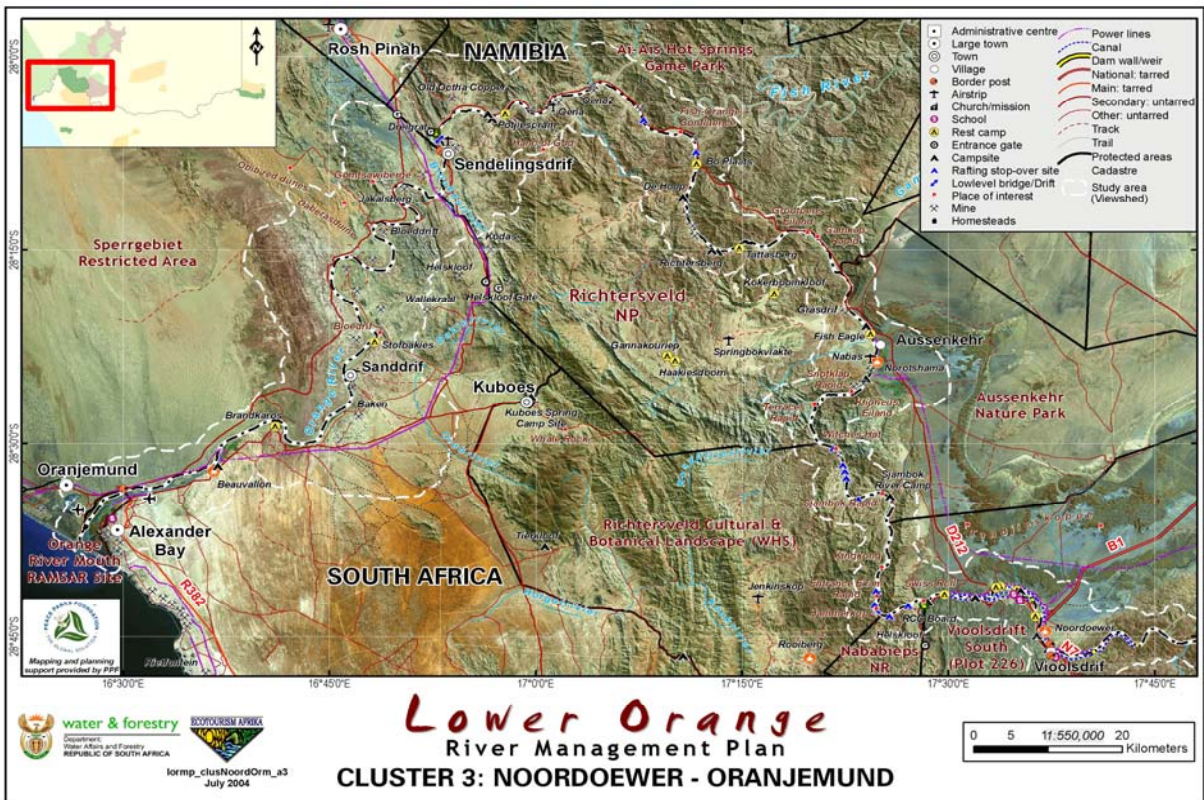
The third section (refer Map 4) is initially dominated by mountains stretching from the Richtersveld to the Hunsberge, which in turn are dissected by the Fish River Canyon, followed by the coastal dunes stretching from the Sperrgebiet in Namibia over the Orange River into South Africa.



Map 2: Augrabies – Onseepkans



Map 3: Onseepkans – Noordoeper

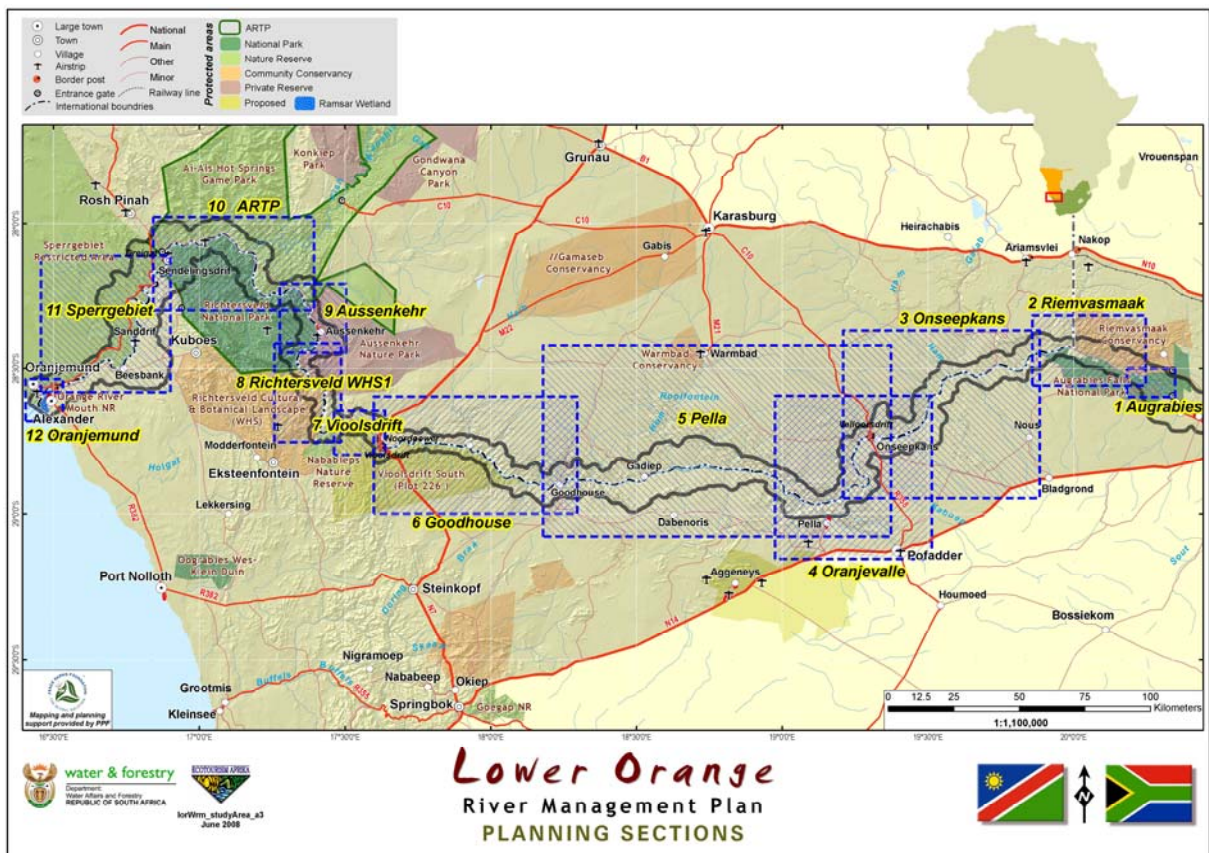


Map 4: Noordoeper – Orange River Mouth

Beside the three broad river sections, the LOR can be divided into twelve (12) management sections, based on a wide range of factors such as protection status, operational use, landscape types, community of interest, etc. These sections are (refer Map 5):

- Augrabies Gorge;
- Riemvasmaak;
- Onseepkans;
- Oranje Valle;
- Pella;
- Goodhouse;
- Vioolsdrift;
- Richtersveld World Heritage Site (WHS);
- ARTP;
- Aussenkehr;
- Sperrgebiet; and,
- Oranjemund.

Within the LORMP variation exists between broad and fine scale plans based on the scope of the project, broad river sections, and detailed river sections.



Map 5: River Planning Sections

1.3 PARTICIPATORY PROCESS

To ensure the active involvement and participation of affected stakeholders the planning approach was based on best practice guidelines associated with participatory planning, providing opportunity for engagement with stakeholders collectively and individually. The participatory planning process (refer Figure 1) is divided into three distinct phases, with the first being aimed at ensuring internal synergy and alignment, the second active stakeholder participation, and the third lobbying for political and institutional support for the plan to ensure effective implementation.

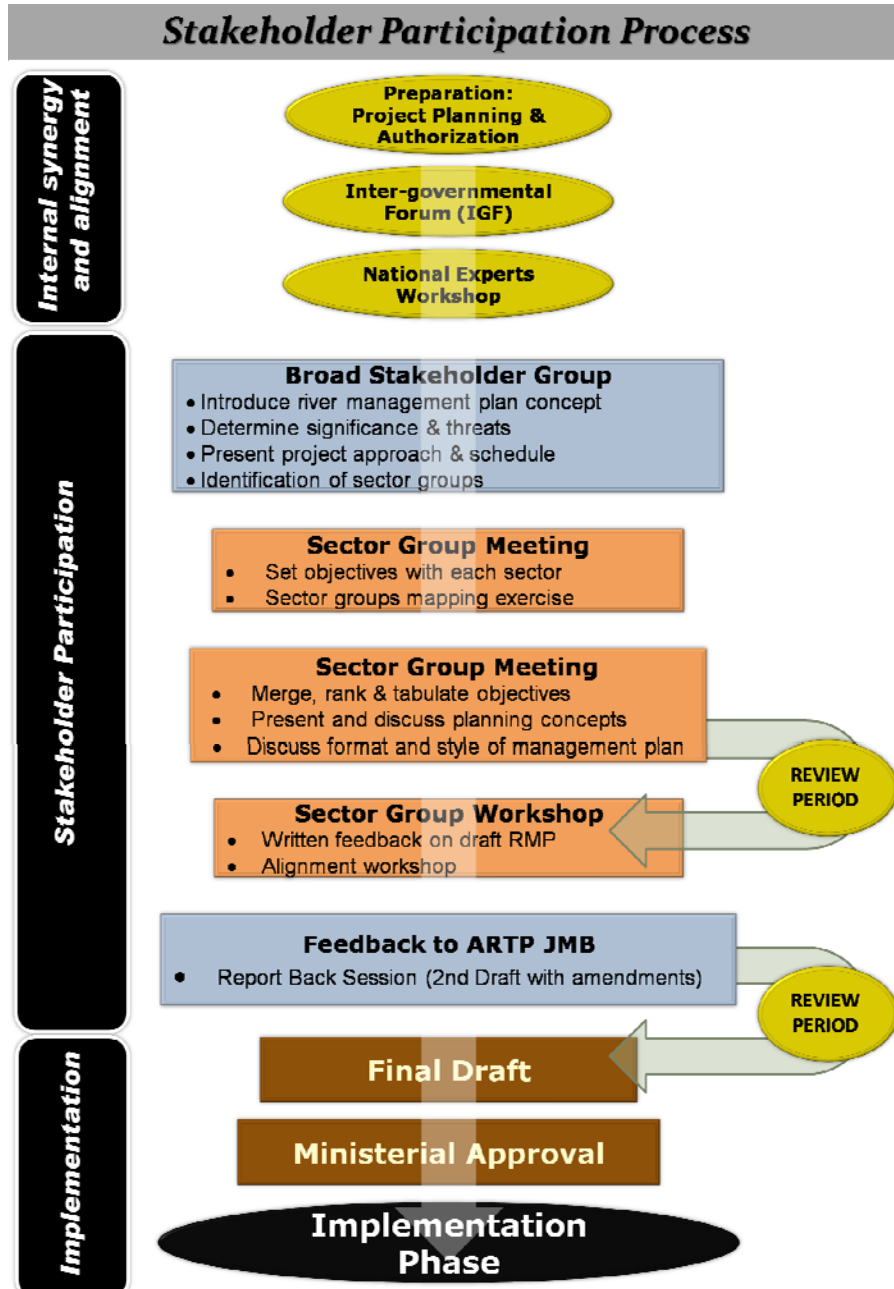


Figure 1: Participation Process

During the first phase numerous discussions were held with the JMB of the ARTP, the Water Management Sector of this Board, the Project Steering Committee established for the preparation of the ICDPs for the respective countries, various Government Departments between and within the two countries, both individually and collectively, resource management experts, operators and industry participants, as well as

traditional leadership structures, politicians and knowledgeable individuals. Baseline data was collected and collated for use within the participatory planning phase.

The second phase was launched with a Broad Stakeholder Meeting in Kakamas, South Africa. Immediately it became evident that the large area covered by the scope of the project, linked to the level of poverty and immobility of key stakeholders, both within South Africa and Namibia, necessitated direct engagement of stakeholders, within specific sector groups. To enable this it was recommended that an Intergovernmental Forum be established in South Africa to facilitate the engagement of Government Departments at all three spheres of Government, that the intergovernmental relationship created by the Twinning Agreement between the Karas Region in Namibia and the Northern Cape Government in South Africa be utilized to discuss issues of transboundary significance, and that the JMB of the ARTP be used to discuss transfrontier conservation issues at a broader scale.

The formalised whitewater rafting, kayaking and canoeing industry represented by the Africa Paddling Association (APA) was requested to incorporate non-affiliated operators in discussions to ensure that this industry speaks with one voice, rather than focusing on divisions as a result of affiliation. Several workshops, planning sessions and discussions were held with these operators regarding the planned interventions and potential solutions to unlocking the ecotourism potential of the river.

During discussions with affected communities, it became evident that the historically disadvantaged communities were unwilling to discuss general aspects individually, and preferred to collectively discuss these matters, yet required assistance to attend meetings. Several meetings were held at Richtersveld, Riemvasmaak, Witbank, Noordoever, Pella, Onseepkans, Warmbad, and Augrabies, while several other meetings pertaining to the ICDPs were held in the region as well (refer Figure 2).



Figure 2: Participation Process

Emanating from these interactions with stakeholders valuable insight into the specific problems, nuances, challenges, regional potential, trends, norms and standards have been garnered, and this plan reflects the needs and expectations of stakeholders, effectively giving a collective voice to these communities of interest, often marginalized due to racial discrimination in the past, or due to the low profile that the rafting, canoeing and kayaking industry has as an economic alternative.

During the final stage the LORMP will be circulated to all stakeholders, individual and collective discussions held, and the inputs aligned, both regarding the use of the river, and the broader conservation objectives for the TFCA target area. Following this the draft plan will be workshopped collectively, after which the plan will be presented to the ARTP JMB. Following approval by the JMB, the LORMP will be submitted to the relevant ministries within either country.

It is envisaged that the final plan will also be submitted to the Permanent Water Commission (PWC) between South Africa and Namibia for approval and implementation as a planned measure according to the guidelines of the SADC Protocol on Shared Water Courses. Undertaken in this way it is believed that both the objectives of the TFCA as well as those regarding the unlocking of the ecotourism potential of the river can be met in an equitable and sustainable manner. This approach represents one of southern Africa's first integrated and aligned approaches to resource planning and conservation, aimed specifically at redressing inequities of the past, yet remaining environmentally and economically accountable.

“wilderness is the original cathedral, the original temple, the original church of life in which they have been converted and healed and from which they have emerged transformed in a positive manner.”

Sir Laurens van der Post in Ian Player

THE PLACE



2 THE PLACE

Within this section of the LORMP, the following is addressed:

- *Subsection 2.1* addresses the biophysical parameters which influence the initiatives to unlock the ecotourism potential of the river including, inter alia, geology and geomorphology, elevation, slope, river landscapes, riverine and riparian, as well as terrestrial ecology, climate, hydrology and water quality;
- *Subsection 2.2* discusses aspects related to the cultural environment within which the planning is taking place, and well as the need to protect and conserve elements of the endemic cultural heritage resources;
- *Subsection 2.3* provides insight into the business environment within which the planning is taking place, specifically illustrating aspects such as mining, agriculture, and the existing river based tourism operations and how they detract from, or contribute to high quality ecotourism development
- *Subsection 2.4* discusses the tenure environment, addressing aspects such as landownership, restitution and utilization rights with the two countries;
- *Subsection 2.5* addresses the governance environment within which the planning has taken place, providing insight into aspects such as demographics, the legal framework from an international and country specific perspective, specifically focusing on aspects such as transfrontier conservation and water resource management and border demarcation, current institutional arrangements and structures between Namibia and South Africa, and the context of this river planning initiative within broader conservation and water management planning initiatives.

2.1 NATURAL ENVIRONMENT

Within this subsection the biophysical parameters that could influence the unlocking of the ecotourism potential of the LOR are discussed, including:

- Geology and geomorphology;
- Elevation;
- Slope;
- River landscapes;
- Riverine and riparian ecology;
- Terrestrial ecology;
- Climate - rainfall and temperature; and,
- Water – hydrology and water quality.

The discussions pertaining to these biophysical parameters are aimed at highlighting the specific influence that a specific parameter has on the ecotourism potential of the area.

Geology and geomorphology influence the environmental dynamics and landscape formation, such as active and non-active drainage areas, while elevation and slope determine landscape resilience, and have a direct influence on the biodiversity of an area. The river landscapes provide insight into the functioning of the river, while the riverine and riparian ecology ascertains the integrity of the aquatic and associated habitats.

The terrestrial ecology discusses aspects such as vegetation and the protection status of these plant communities. Rainfall and temperature, as a result of climatic influences, provide an indication of the ideal season during which activities can take place, while the discussion on water specifically addresses the hydrology and water quality issues, two aspects that directly affect tourism utilisation of the river.

2.1.1 Geology and Geomorphology

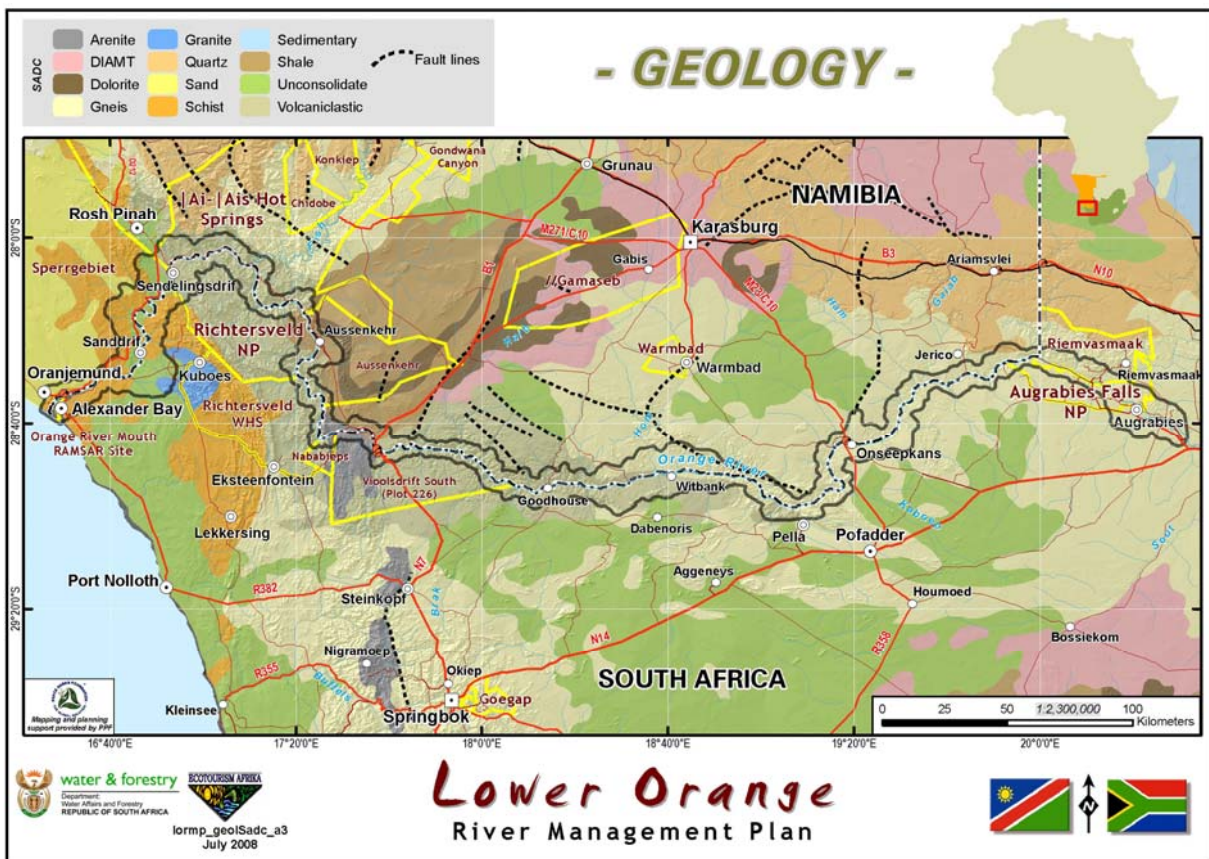
According to PWC, 2005d and PWC, 2005g, from Augrabies to Vioolsdrift/Noordoewer, the geology consists mainly of gneisses and schists, as well as granite and pegmatite. Downstream to Kotzeshoop, shale, limestone, arcose and phillites of the Nama System are found. West of Kotzeshoop, the LOR flows through the Richtersveld Igneous Complex. A variety of rocks, varying from the Swaziland System to the young tertiary river terrace-gravels are to be found in this area.

The LOR is generally deeply incised with narrow, poorly developed alluvial terrace deposits. The surrounding area consists mainly of exposed Namaqua Metamorphic Complex rocks, with some granites belonging to the Vioolsdrif and Haib groups. Very extensive quaternary outwash fans, with mainly dry, braided pattern drainage are an important feature of the terrain. (Refer Map 6.)

The LOR valley terrain consists of four major components:

- Gorge sections (< 1km wide) with steep rubble foot slopes and poorly developed silt terraces;
- Narrow valley sections (1- 1.5km wide) with wide silt terraces and minor tributary valleys;
- Broad valley sections (> 1.5km wide) with silt and gravel terraces and major tributary valleys; and,
- The coastal plain, characterized by steep sand dunes and a gradual river gradients.

Gorge-like sections of the river are generally difficult to access with silt terraces prone to undercutting or whole-scale removal during high floods (refer Figure 3). Narrow valley sections have relatively stable silt terraces relics, often showing some hummock dune development (refer Figure 4). Broad valley sections have well-preserved expanses of silt and gravel terraces, as well as extensive outwash fans from tributary streams (refer Figure 5). The coastal plain are characterized by steep dunes within the Sperrgebiet which terminate at the Orange River (refer Figure 6).



Map 6: Geology

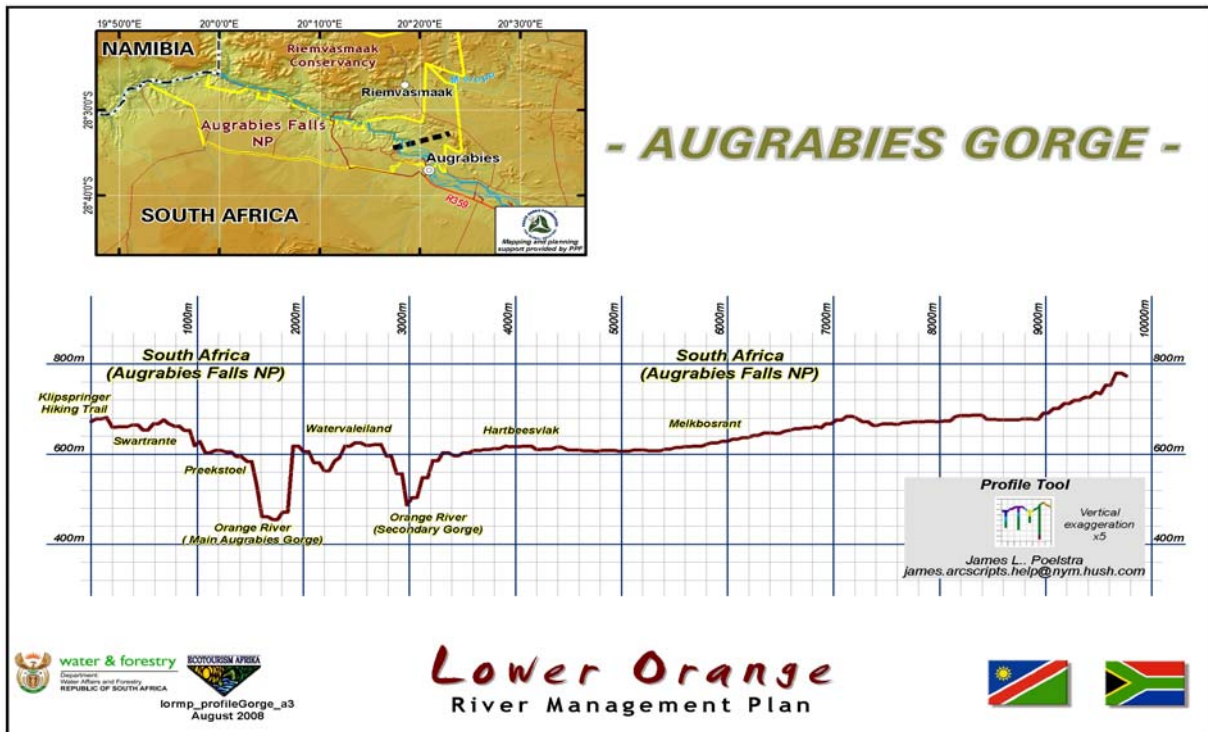


Figure 3: River Profiles – Augrabies Gorge

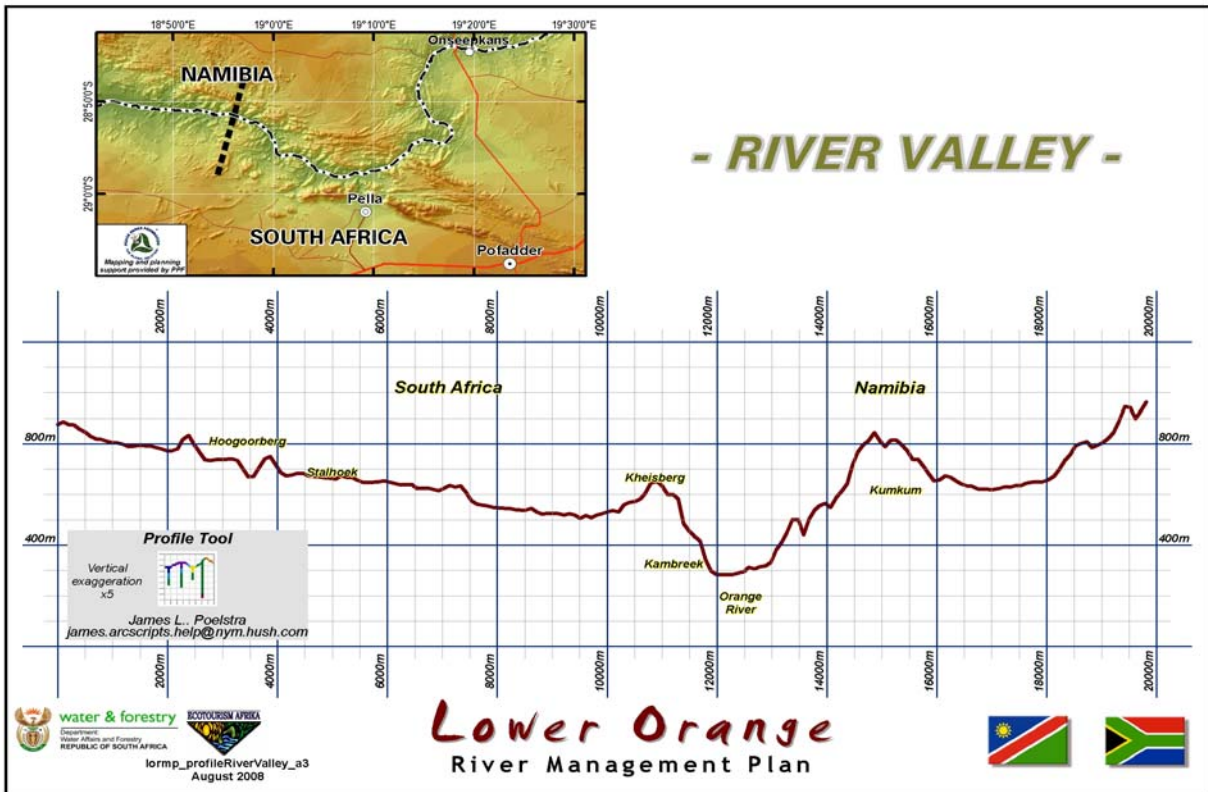


Figure 4: River Profiles – River Valley

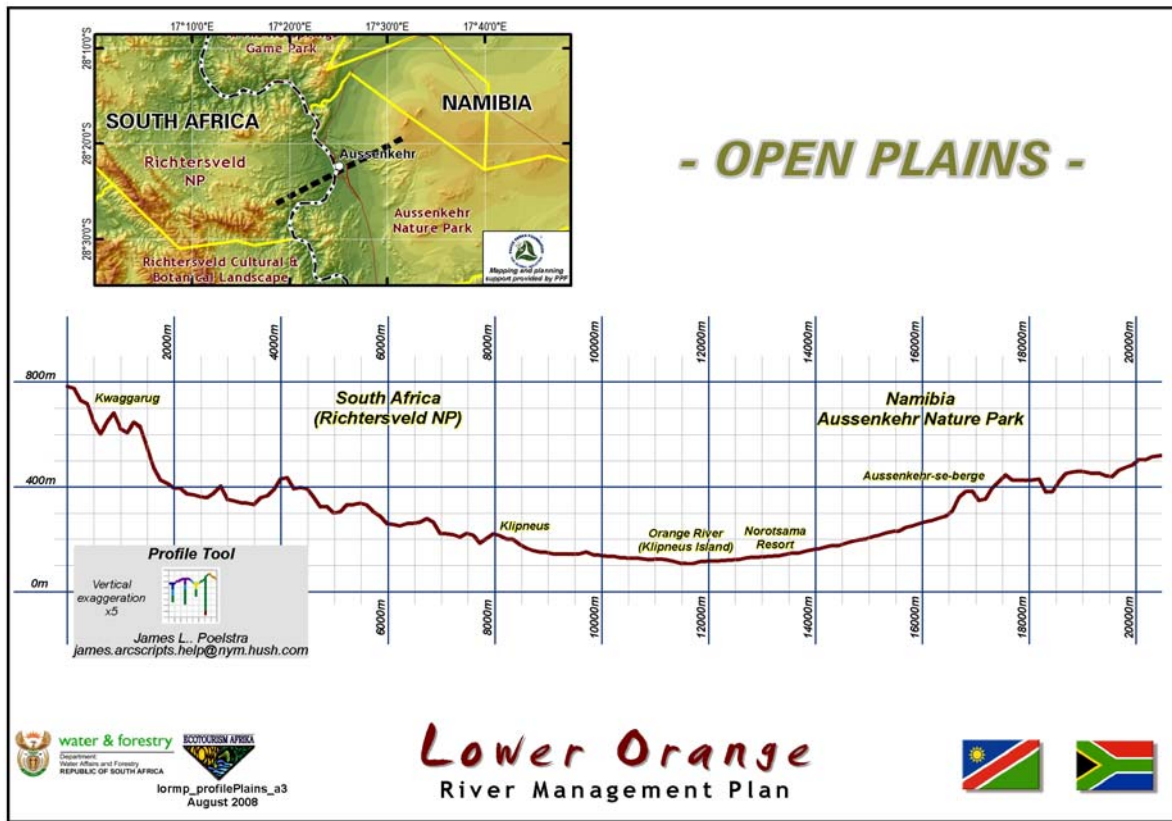


Figure 5: River Profiles – Open Plains

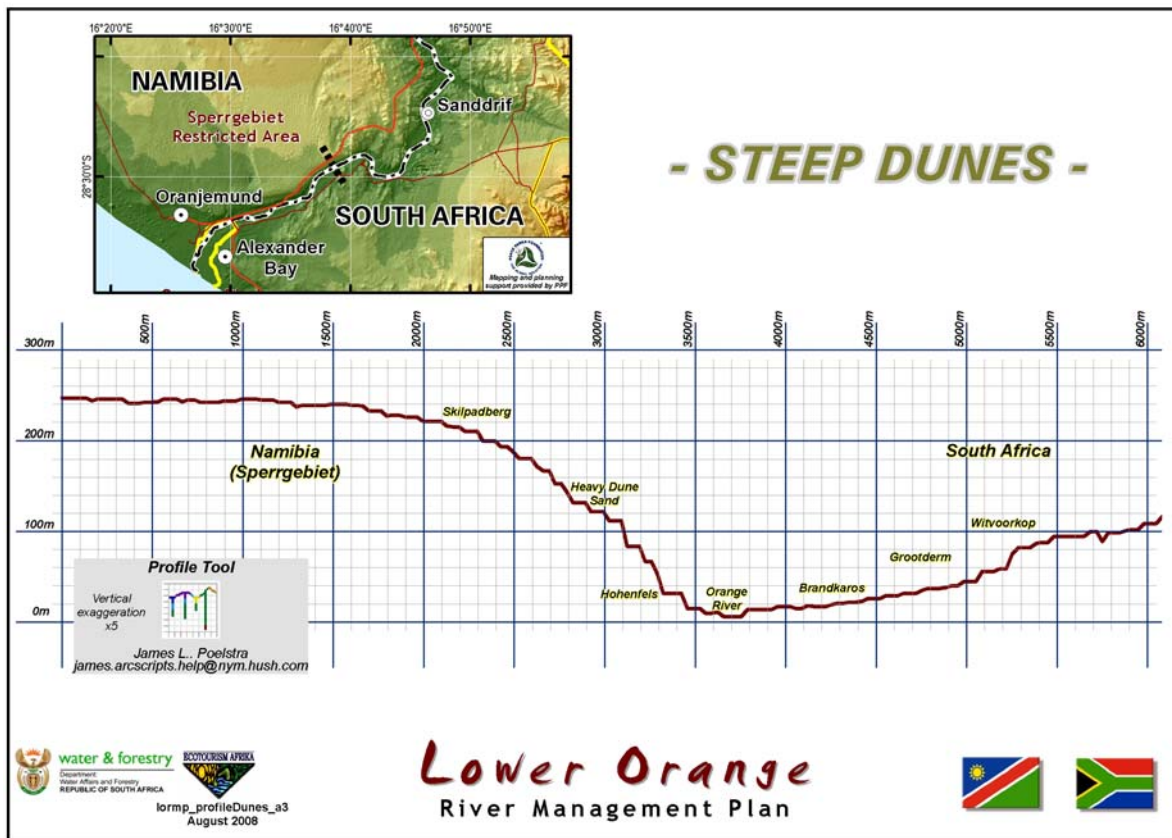


Figure 6: River Profiles – Steep Dunes

2.1.2 Elevation

Despite being perceived as a flat landscape, the LOR area is characterised by a deeply incised landscape with vast altitudinal variation, exceeding a 1000m in places, the highest areas being within the Hunsberg mountains just north of the Orange River within the ARTP. Large altitudinal variations also occur close to Pella, with smaller variation in the Augrabies Gorge, contributing significantly to the biodiversity of the region. (Refer Map 7.)

The western portion of the study area is additionally characterised by the relatively flat coastal plain stretching from the mouth of the river to the Hunsberge and mountains of the Richtersveld. Within a relatively short distance the altitude varies from sea level to almost 2km above sea level.

From the Augrabies Falls to the north-south orientated Mountains running parallel to the coast the Orange River effectively flows through a basin or depression, with higher, and flatter areas either side creating arcs away from the river (Refer Fig. 7).

2.1.3 Slope

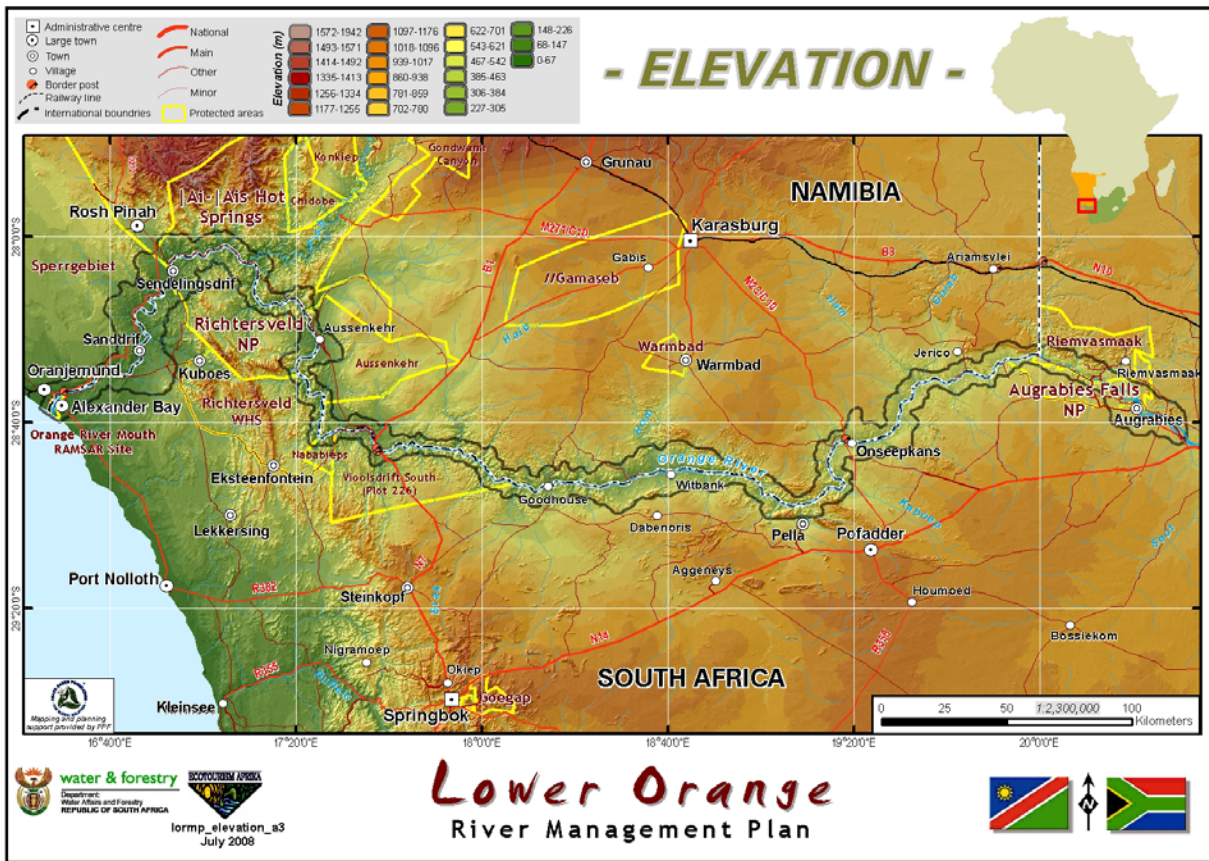
Five distinct steep slope areas occur along the river (refer Map 8):

- from the Augrabies Gorge along the table landscape stretching from Riemvasmaak to Ariamsvlei,
- Pella hills;
- from Goodhouse to Vioolsdrift;
- Nababeep to Aussenkehr; and,
- the ARTP.

These steep slopes negatively influence the accessibility of the area, yet locally, roads, such as at Blouputs and through the ARTP, access is relatively easy, despite the presence of steep slopes.

Besides difficulties associated with access, these steep slopes also affect run-off, with flash floods resulting from relatively low rainfall, yet exacerbated by the steepness of the terrain accelerating drainage. Due to the ruggedness of the terrain the trend is to place roads and camps on the relatively flat terrain offered by small streams and rivers draining the catchment. These, however, trend to wash away during flood events, emanating in losses to property and of lives, as well as critical access within inaccessible environments.

The escarpment edge and the identified steep areas along the river, contrast strongly with the flat terrain elsewhere in the study area, interspersed with smaller hills or inselbergs.



Map 7: Elevation

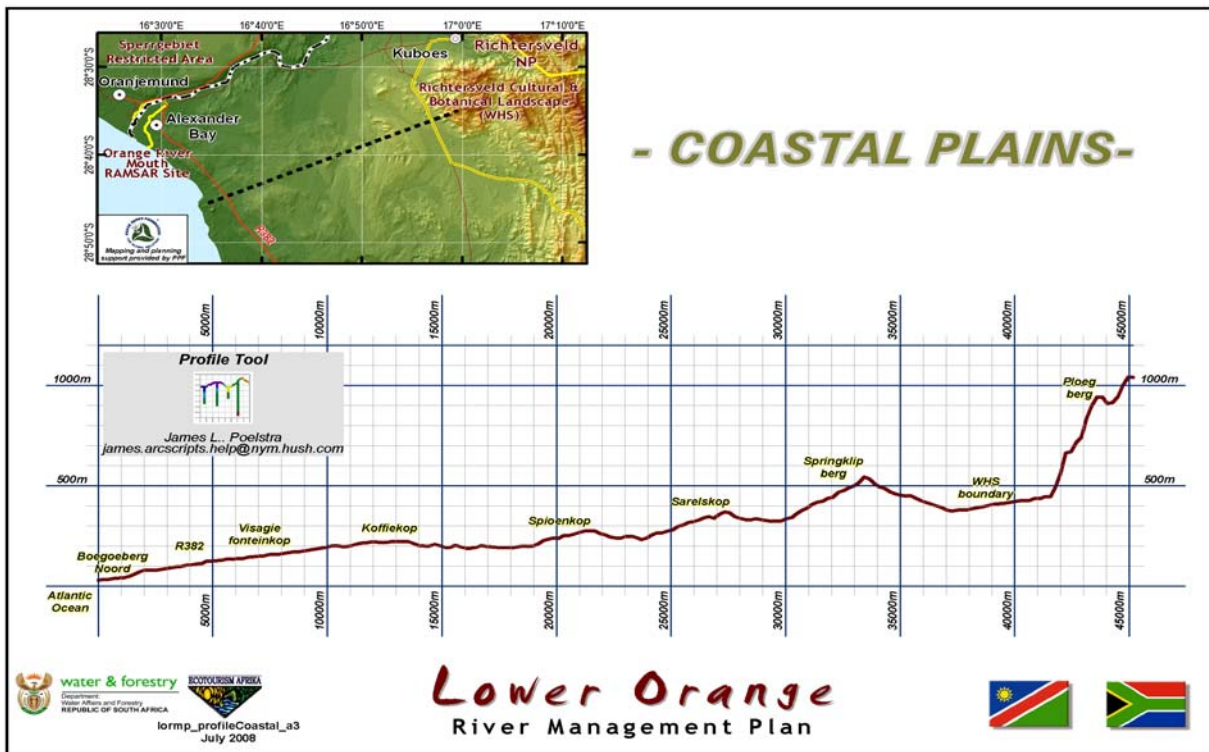


Figure 7: River Profiles – Coastal Plains

2.1.4 River Landscapes

The geology, geomorphology and slope of the LOR directly influence the various river landscapes characteristic to the region resulting in the following six distinct river landscapes (refer Figure 8):

- **Braided** – characterised by an abundance of interwoven channels, creating islands of varying sizes;
- **Braided rocky** – where the river cuts across or along underlying bedrock resulting in the formation of rocky channels;
- **Rocky** – where the river has washed away all silt and exposes solid or loose rock and gravel, often associated with alluvial fans from quaternary catchments and streams;
- **Pool and ripple** – where rocky outcrops or sand banks are interspersed between pools creating small impoundments with rapids;
- **Perennial pools** – characteristic to the flat portions of the river lacking steep gradients; and,
- **Perennial pools sandy** – characteristic to the coastal plain where the gradient is flat and the effect of the Namib dunes pronounced, dominating the landscapes yet unable to curb the flow of the river.



Figure 8: Images of Representative River Landscapes

The extent of riparian vegetation, ranging from extensive and thick (mesic) through interspersed (nano) and sparse (xeric), to absent (absolute xeric) (Refer Figure 9), as well as the transformation types affecting the integrity of the riparian habitat, indicating whether the impacts are from settlements, mining or intensive agriculture are provided in an integrated river landscape series of maps (refer Maps 9-20) that illustrate the distinctive river landscapes along the 12 river sections as identified in this plan – summaries of the various landscapes and associated riparian vegetation are provided in Figures 10 and 11.

It is interesting to note the changes in the landscapes from the upper portions which are rocky and devoid of riparian vegetation, through the pools and ripples, and braided sections in the middle portion of the river, to the pools on the coastal plain. The braided rocky portions characteristic to the Oranjevalle section are quite unique along the entire LOR.

The extensive braided and braided rocky landscapes will influence the safe use of the river since these landscapes could result in groups being split and losing contact with each other. The use of concessionaires, river guides and registers could assist in overcoming this challenge, if combined with good mapping and river knowledge. The changing dynamics along the river as a result of floods and droughts will however influence the location of these channels.

The perennial pools as well as sandy pools does influence the product range since the slow water flow in these pools could make paddling difficult, especially if westerly breezes and winds are experienced. This however does not make these portions unusable within the field of ecotourism, yet would require the use of alternative vessels and river knowledge.



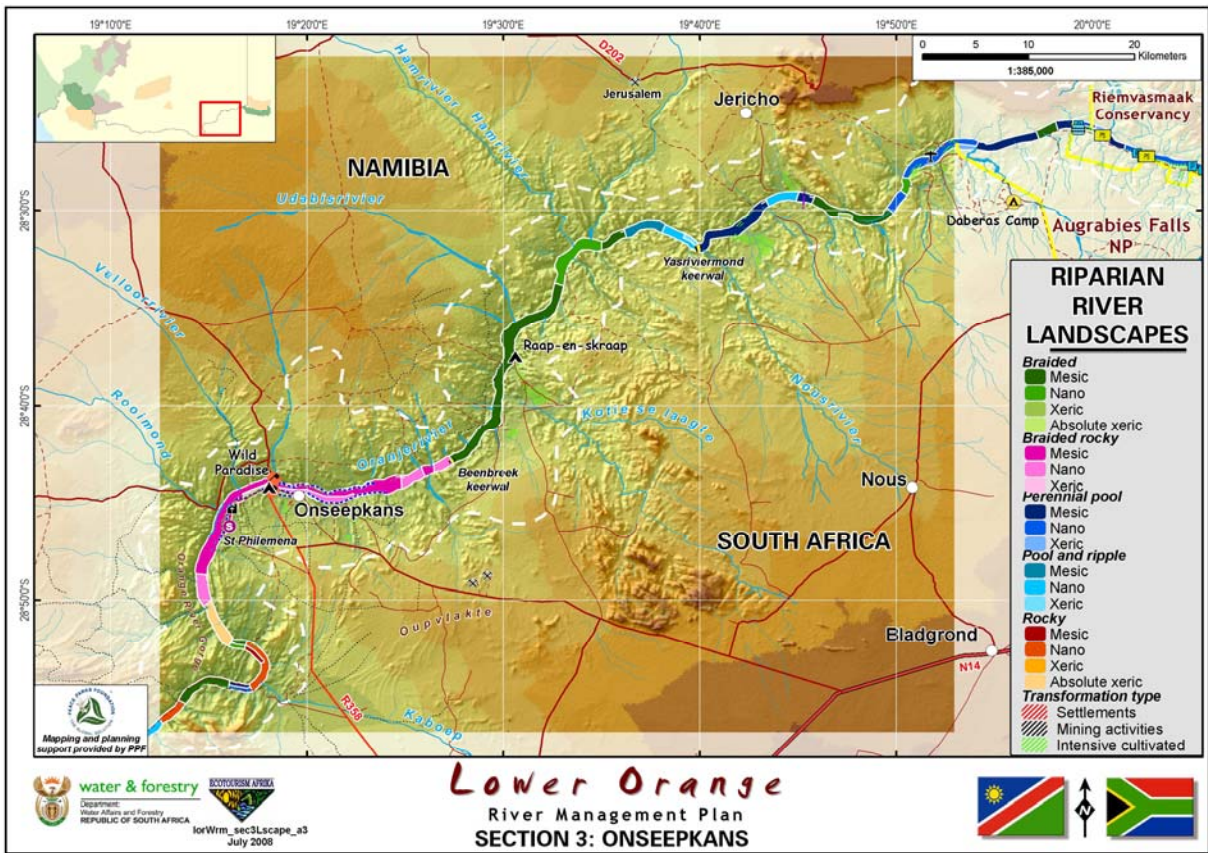
Figure 9: Images of Representative Riparian Vegetation



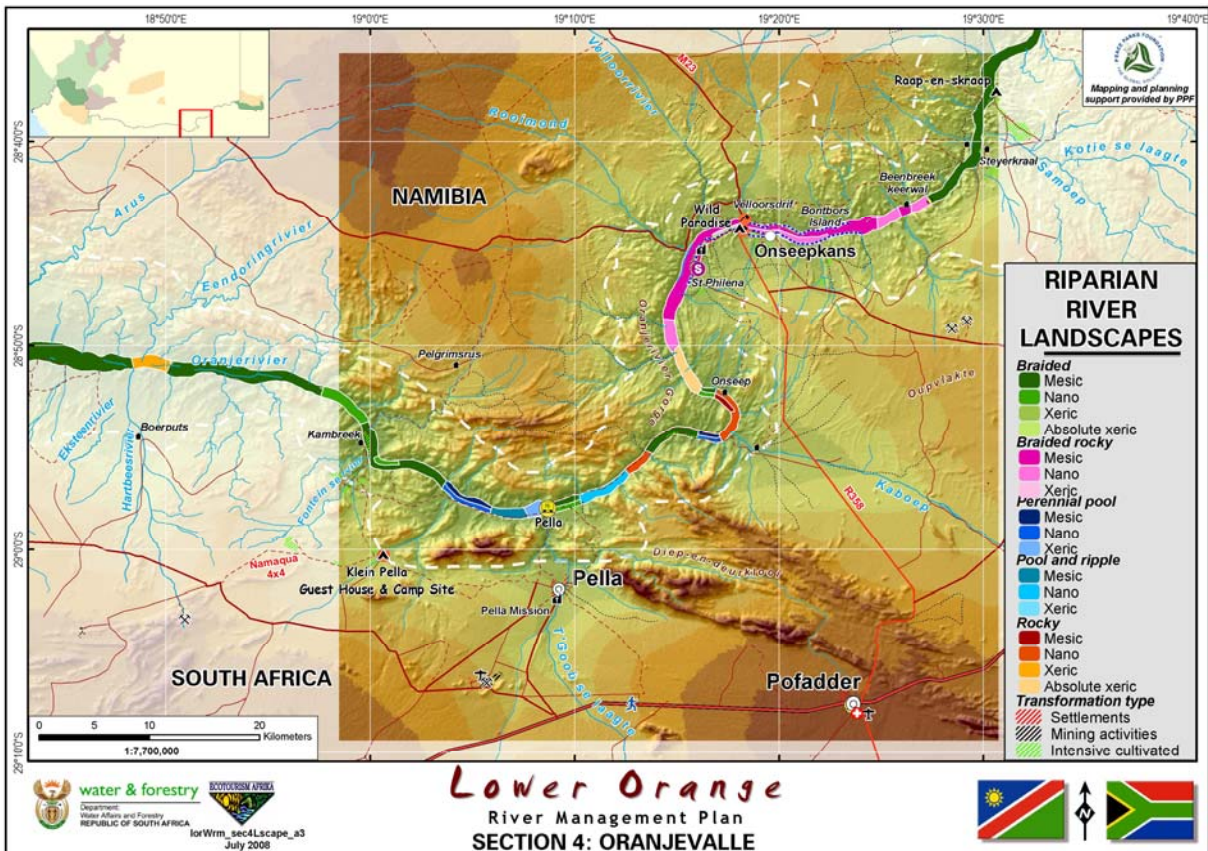
Map 9: River Landscape Section 1 (Augrabies)



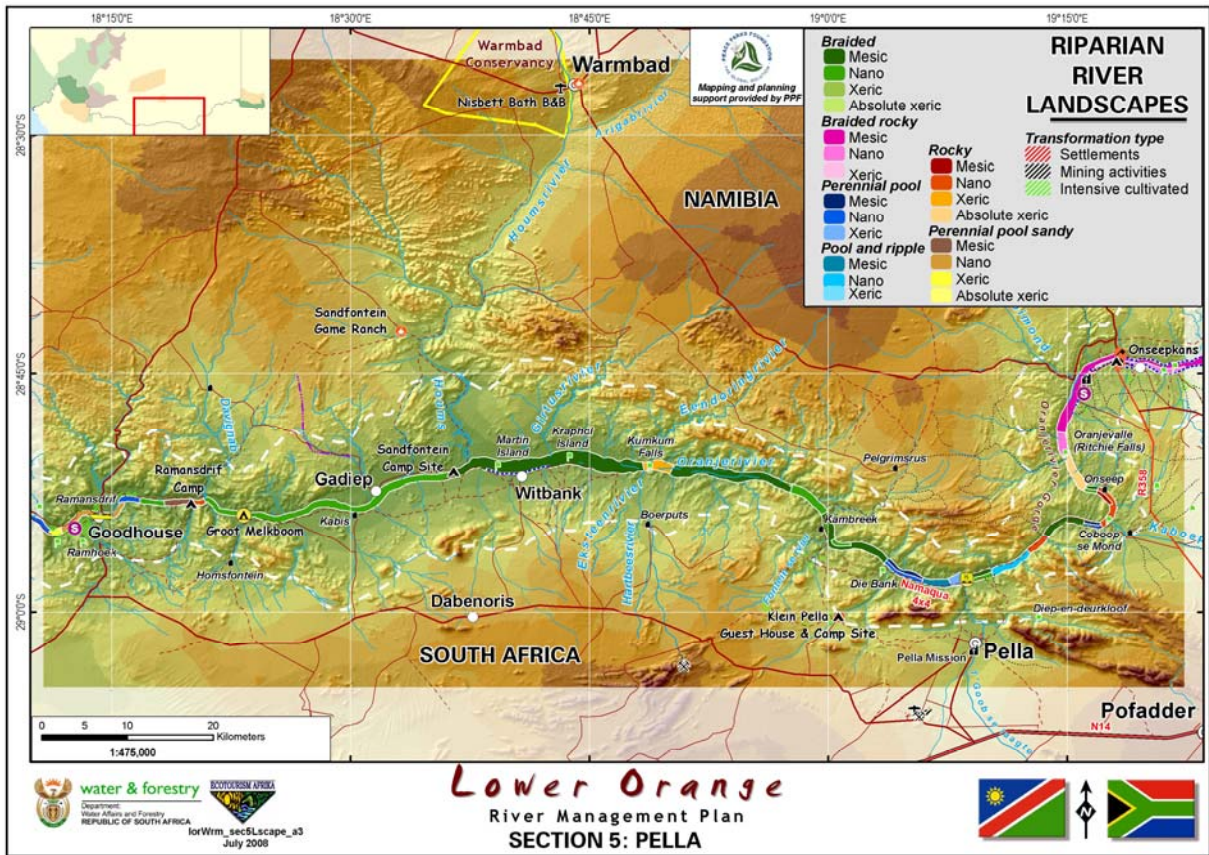
Map 10: River Landscape Section 2 (Riemvasmaak)



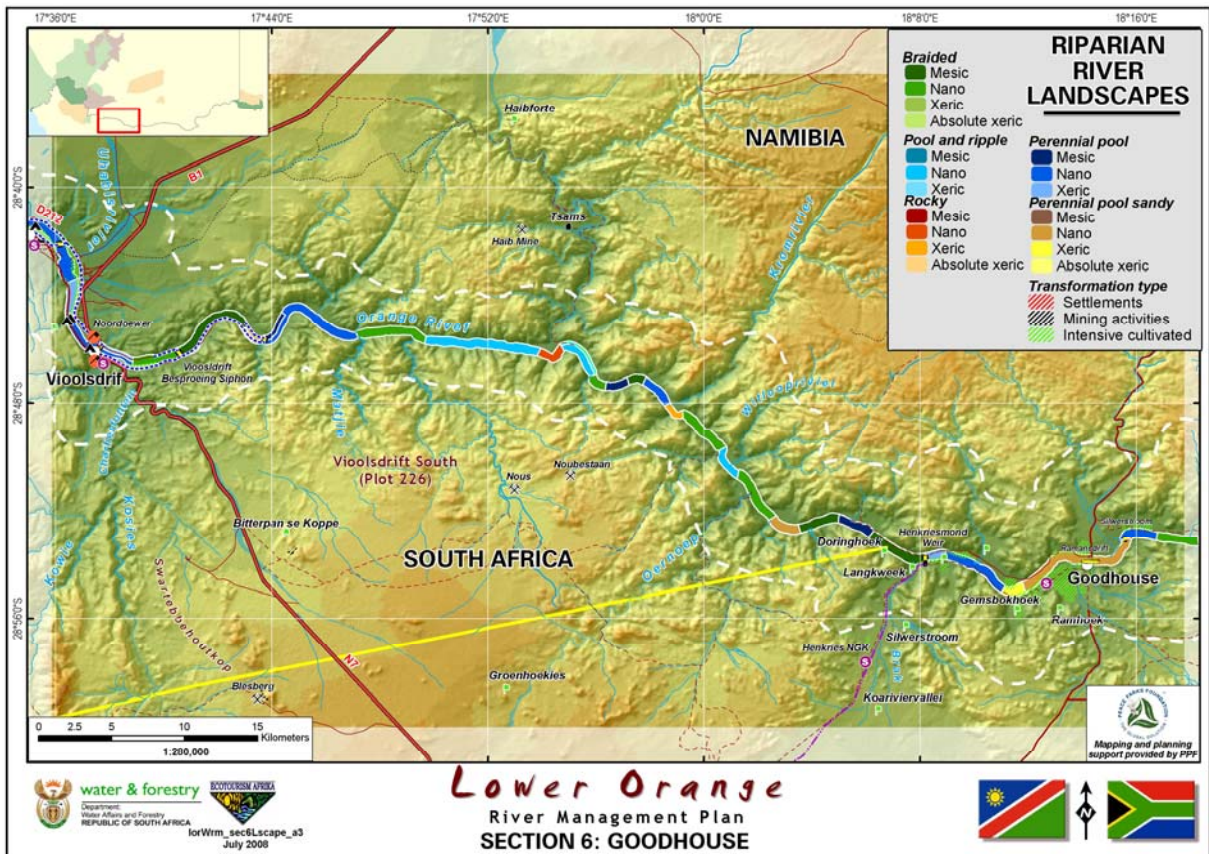
Map 11: River Landscape, Section 3 (Onseepkans)



Map 12: River Landscape, Section 4 (Oranjevalle)



Map 13: River Landscape, Section 5 (Pella)



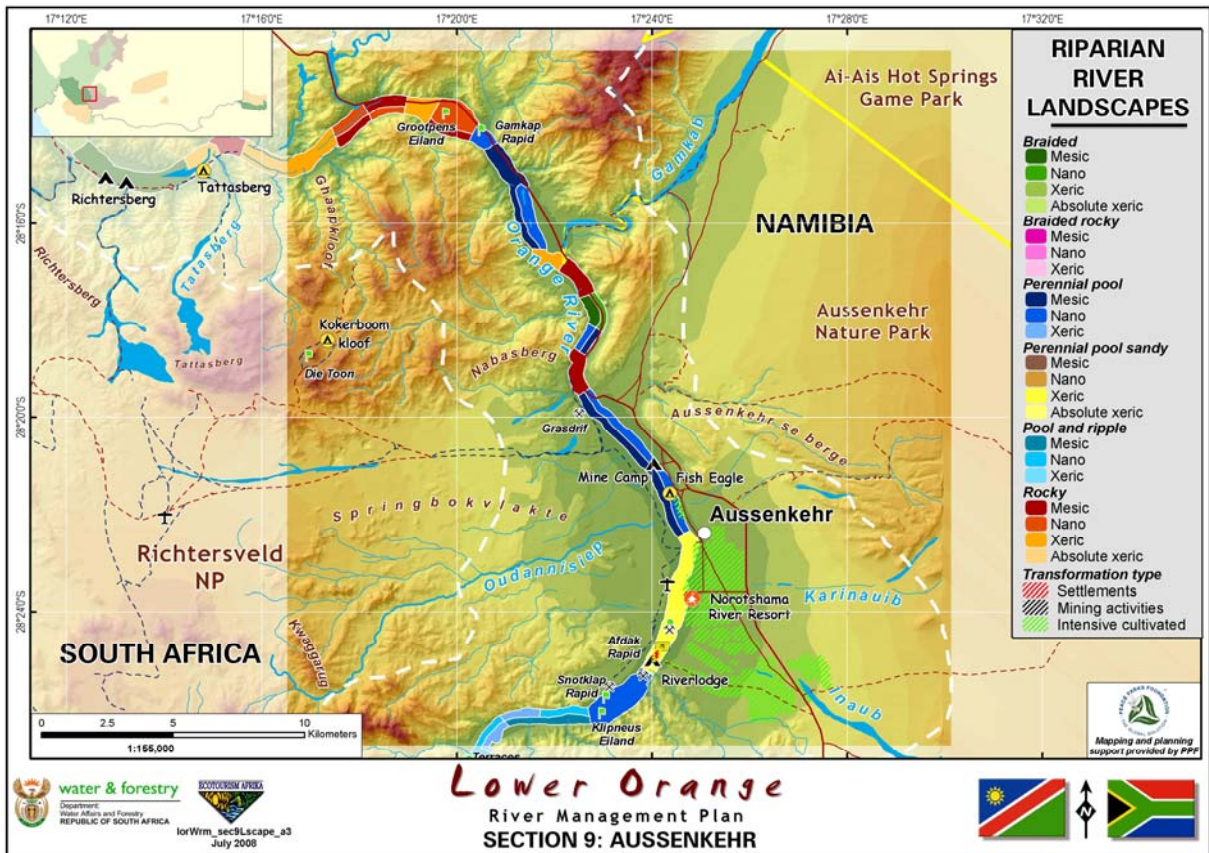
Map 14: River Landscape, Section 6 (Goodhouse)



Map 15: River Landscape, Section 7 (Violsdrift)



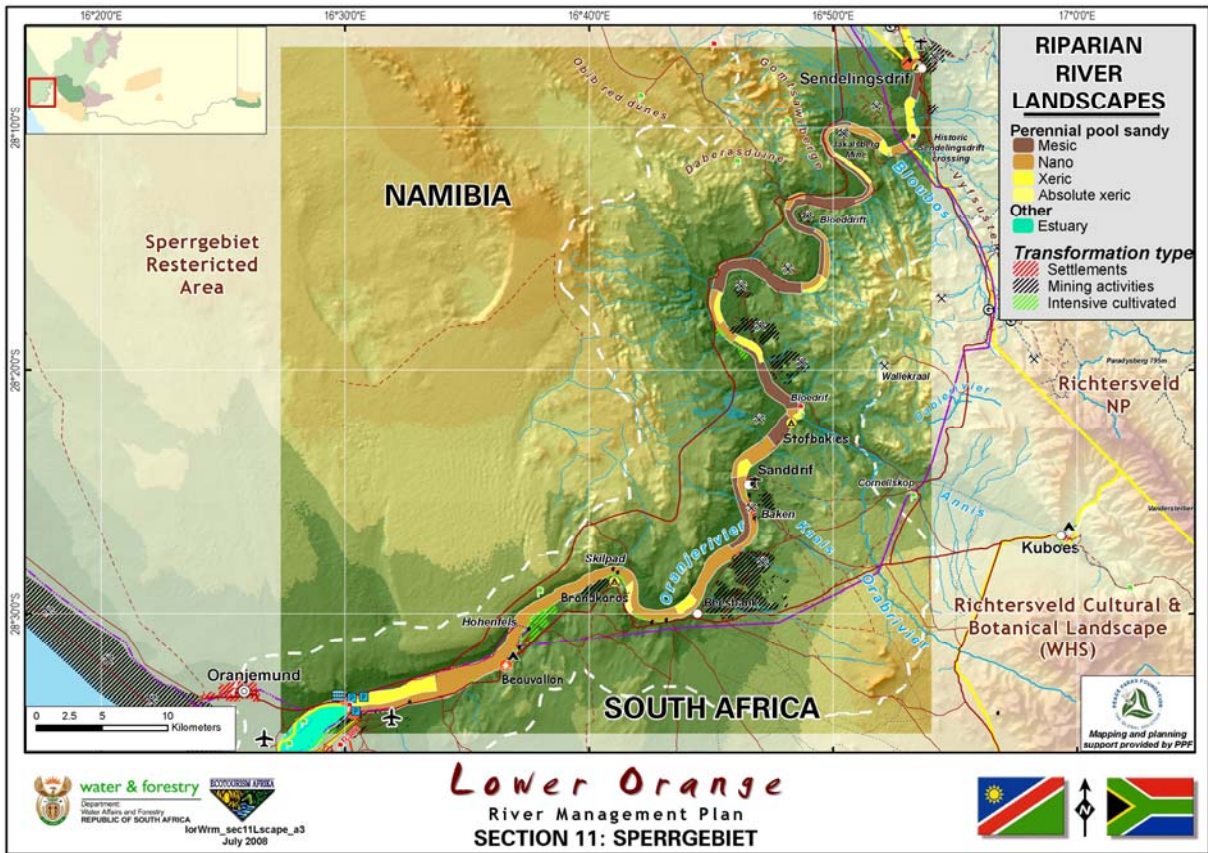
Map 16: River Landscape, Section 8 (Richtersveld)



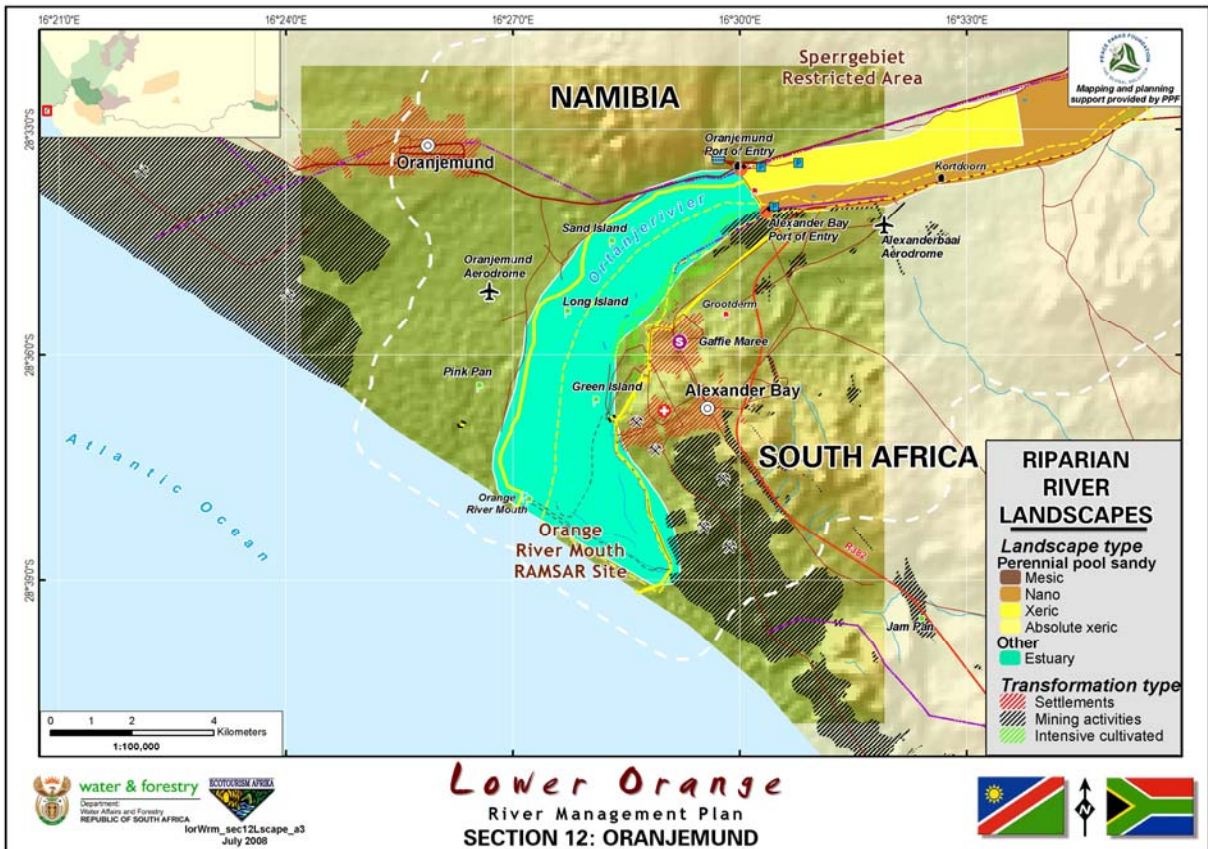
Map 17: River Landscape, Section 9 (Aussenkehr)



Map 18: River Landscape, Section 10 (ARTP)



Map 19: River Landscape, Section 11 (Sperrgebiet)



Map 20: River Landscape, Section 12 (Oranjemund)

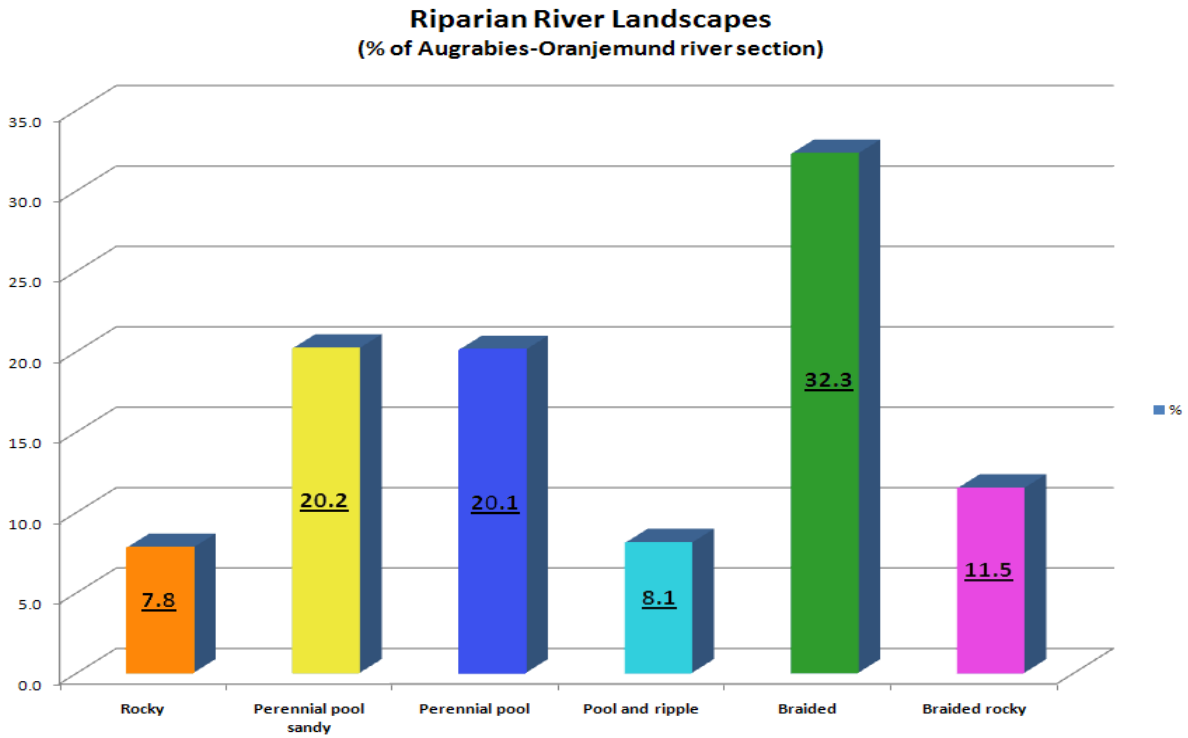


Figure 10: Graph indicating Percentages Riparian River Landscapes

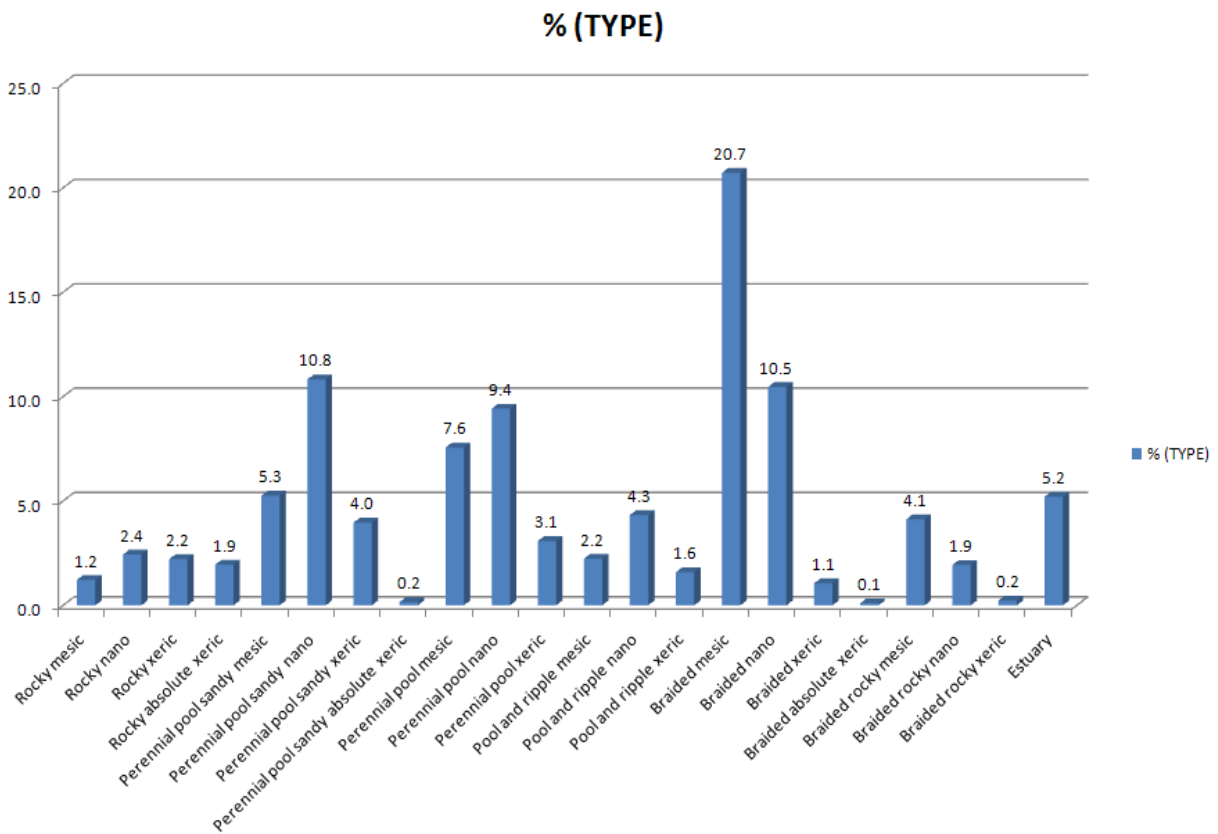


Figure 11: Graph indicating Percentages Riparian River Landscapes and Associated Vegetation Cover

2.1.5 Riverine and Riparian Ecology

According to PWC, 2005a, 2005f and 2005g the aquatic and riparian ecosystems of the LOR evolved in response to the natural seasonal flow pattern, inclusive of the flood regime. This regime has however increasingly been modified, principally due to the construction of large dams. It is anticipated that the aquatic ecosystem has and will continue to respond to this change over time. A number of aquatic microphytes and aquatic and semi-aquatic macrophytes are present in the LOR. Filamentous Phycophyta are fairly abundant in the side streams of the LOR and the blue-green algae occur in the lower stretches of the river. A number of relatively pristine stretches of shoreline and island vegetation have been observed in the mountainous and less accessible areas; however, these areas are under threat. The exotic tree, *Prosopis* species has invaded large areas of the riparian forest, while reeds are the dominant semi-aquatic macrophyte along the whole of the river. This indigenous plant can reach pest proportions, especially downstream of irrigation areas, due to increased disturbance and possibly an increase in nutrients.

Invertebrate populations appear to be rather homogenous through the entire length of the river. This is likely to be due to the natural unpredictable, erratic nature of the flow regime. Freshwater shrimp and freshwater mussel are found in the river. The LOR downstream of the Augrabies Falls is very important with regard to fish species, with 12 of the 15 indigenous freshwater fish of the Orange River found in the LOR. These include one unique Red Data listed endemic and other unique and vulnerable indigenous species. A gradual downstream increase in the occurrence of freshwater fish being infested by parasites, as well as increase in fish parasite diversity has been observed, possibly due to a deterioration in water quality.

The present ecological status of the river has been generally assessed as being largely modified and its condition is deemed to be on a negative trajectory. Controlling the present mechanical manipulation of the river bed, banks and floodplain is extremely important as these factors are major contributors towards the decline in the condition of the riverine ecosystem, which together with the current manipulation of the flow regime will eventually lead to its complete collapse. Particular attention should be given to maintaining the few remaining and relatively undisturbed braided or anastomosed sections, e.g. upstream of Onseepkans. These areas are considered to be ecologically important.

The ORM wetland is a RAMSAR site (a wetland of international importance) – in September of 1995 this site was placed on the Montreaux Record as a result of severely degraded state of the salt marsh on the south bank – the LORMS study concluded that its present ecological state is largely modified. Along the entire length of the Lower Orange River, a high percentage of the riparian habitat is transformed (63.8%), with high levels of transformation totaling 34.9%, moderately transformed 19.1%, and totally transformed 9.8%. Low levels of transformation total 25%, while only 11.2% can be classified as pristine, yet most of this is not in formally proclaimed protected areas, and therefore under threat. Attempts must be made to formally protect these, through conservation or custodianship agreements with the relevant landowners (refer Fig. 12).

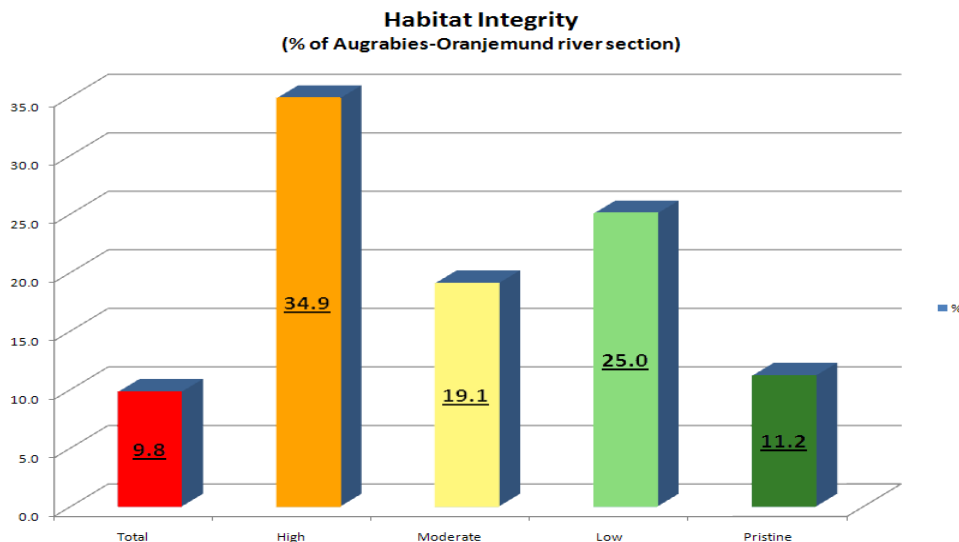


Figure 12: Graph indicating Percentages Habitat Integrity

2.1.6 Terrestrial Ecology

The focus area of the proposed LOR TFCA lies within the semi-arid Nama Karoo and Succulent Karoo Biomes, the latter of which is the most diverse desert system in the world. Although the eco-region contains many endemic plants, the fauna of the Nama Karoo is relatively species-poor. Grazing pressure from sheep and goats have impacted on the vegetation and altered habitat for native wildlife in many areas (PWC, 2005g).

The main vegetation types (refer Map 21) associated with the river include, *inter alia* vegetation from the following bioregions in South Africa:

- Bushmanland Bioregion;
- Gariep Desert Bioregion; and,
- Southern Namib Desert Bioregion;

and from Namibia:

- Orange River Valley;
- Edaphic dry sparse shrubland;
- Dwarf Shrub Savanna;
- Mountain succulent dwarf shrubland; and,
- Plains dwarf shrubland.

The ORM, as an estuary has vegetation associated with salt marshes, recognised as a Ramsar site, this is a wetland of international significance.

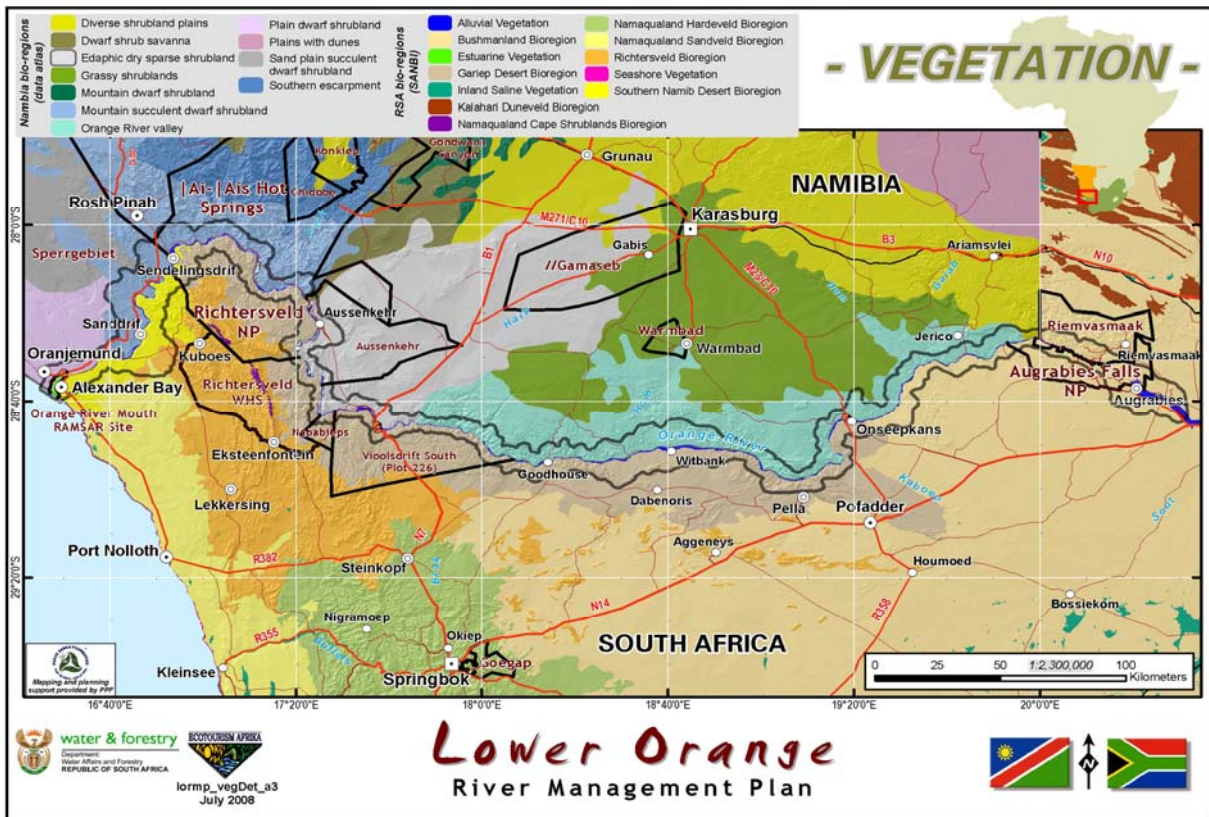
Despite the significant role that the Richtersveld National Park (RNP) and World Heritage Site (WHS), and the AFNP play in providing protection to the vegetation of this region, most of the vegetation along the LOR is not protected, with only a few portions poorly or hardly protected at a national level (refer Map 22).

Through collaborative efforts between the Namibia and South Africa additional areas such as the portion between Henkries and Vioolsdrift/Noordoewer could form part of a transboundary conservation initiative incorporating state land on both sides of the river. Other partnerships between the public, private and communal sectors could see the protection of large portions of areas not currently afforded any protection status.

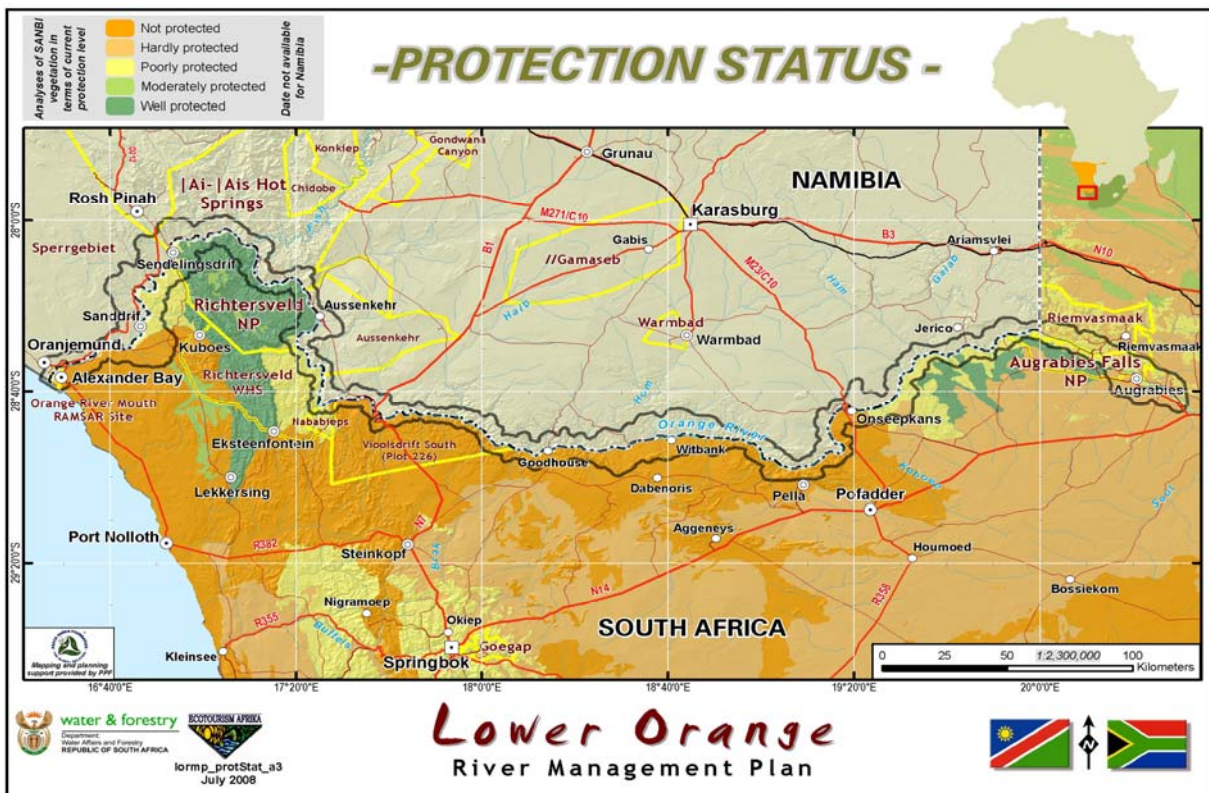
This could be undertaken between the landowners all along the LOR from AFNP to the Richtersveld complex on the South African side, and from Ariamsvlei in the east to the Ai-Ais Hot Springs Game Park and the Sperrgebiet in the west on the Namibian side. Numerous private conservation initiatives such as Sandfontien, Aussenkehr, and the Greater Fish River Canyon Complex (GFRCC) could be linked with communal initiatives to establish TFCAs where state land does not exist. These initiatives could contribute significantly to the protection of vegetation types that currently are not meeting national targets.

Due to its ecological significance, the possibility exists for the establishment of a world heritage site focusing on the Succulent Karoo biome within the region, yet this would require collaboration between the two countries. Possibly this could form the basis for an expanded TFCA within the area, and should include the portions of the Nama Karoo, specifically the Gariep Desert Bioregion (Orange River Brokenveld); the Bushmanland Bioregion (grassy shrublands); and the alluvial vegetation in the Orange River Valley, all vegetation types that require additional protection, both in Namibia and South Africa.

This protection status could be bolstered by incorporating aspects such as the cultural landscape unique to the region, drawing on the successes of the Richtersveld Cultural Landscape which achieved World Heritage Status. By combining the significant natural features with the cultural heritage of the region the protection can be made ensured from both sides, and lead to a broadening of the understanding of the cultural utilisation of the region's natural resources, and the influence that the region has had on the cultural heritage of the people who call this home.



Map 21: Vegetation



Map 22: Protection Status of Vegetation (RSA)

2.1.7 Climate

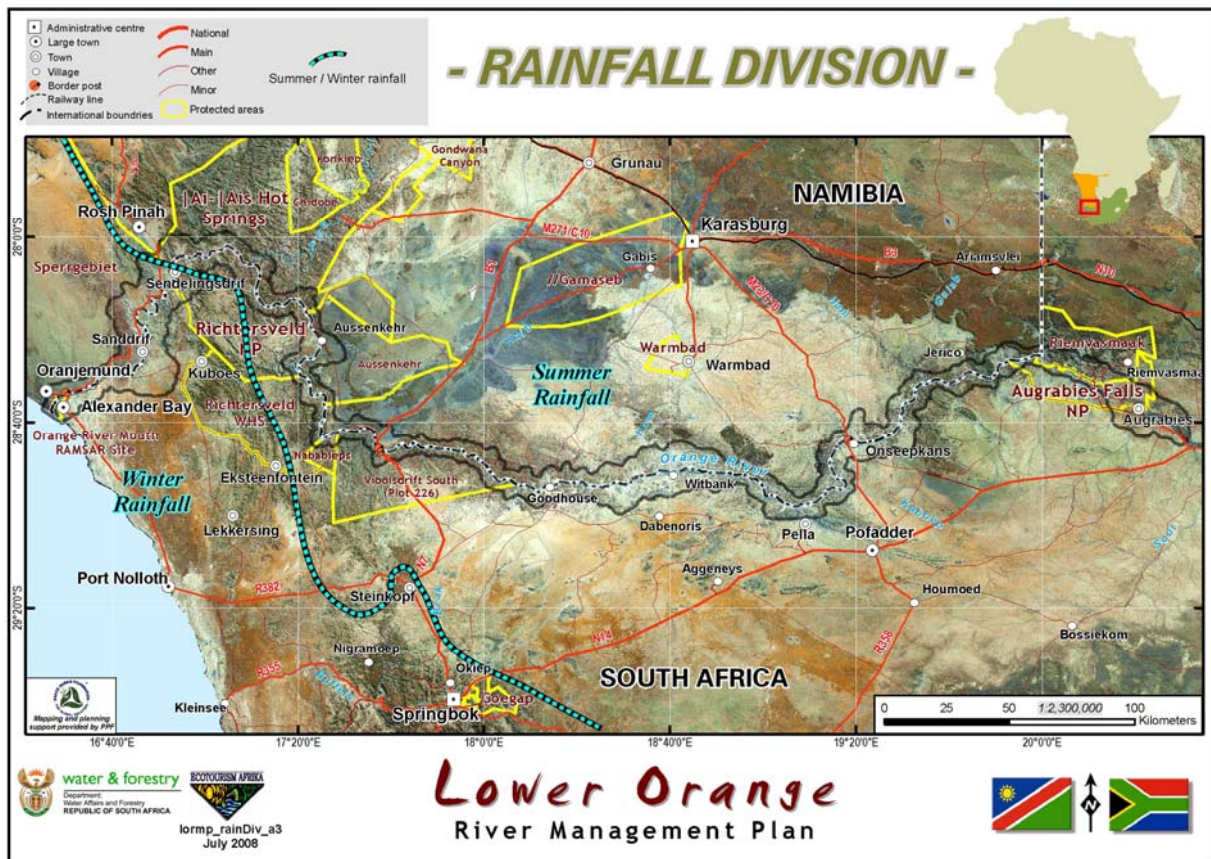
2.1.7.1 Rainfall

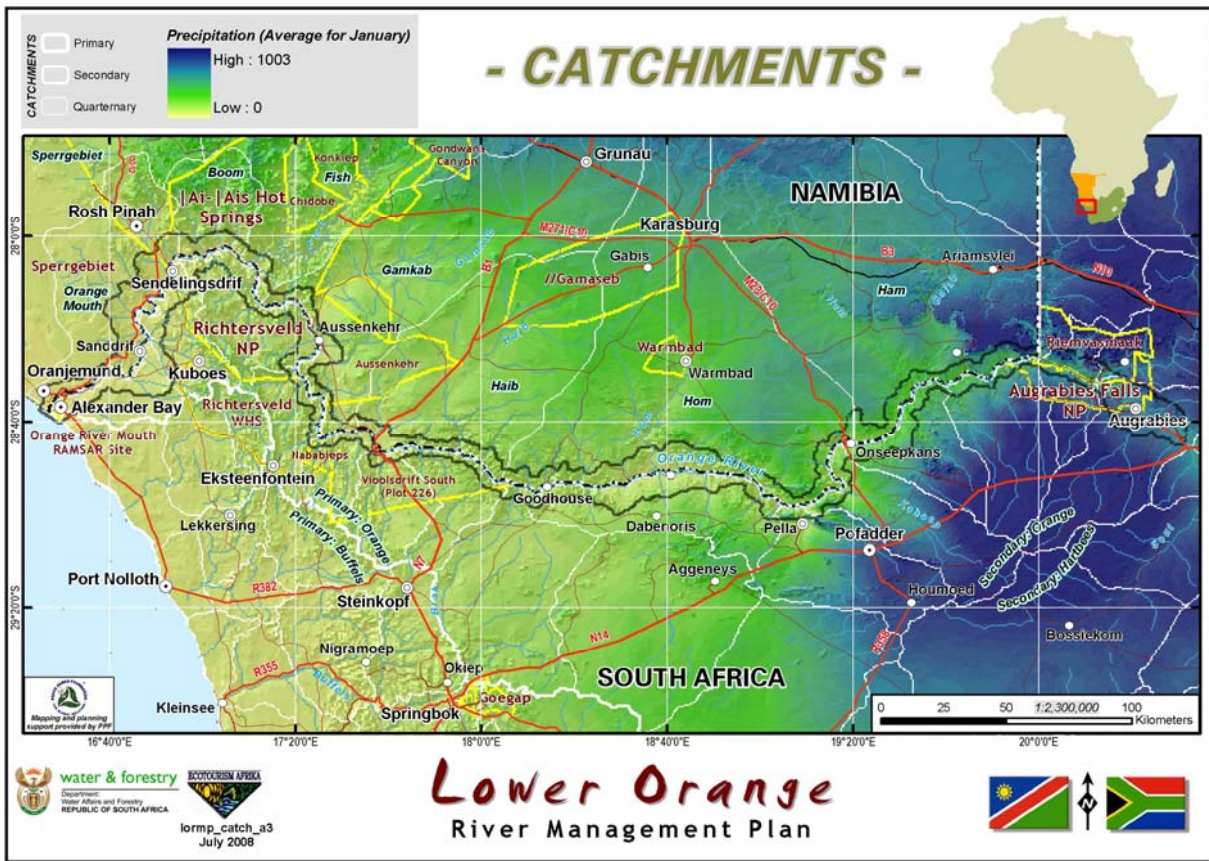
Two desert systems are drained by the catchments of the Lower Orange, the Succulent Karoo in the extreme west of the study area, consisting of the ‘winter rainfall’ area from Luderitz south to the Orange River and on into South Africa, representing the area where rainfall occurs with almost equal improbability throughout the year; and the Nama Karoo, which receives mainly ‘summer rainfall’ and comprises a number of different vegetation types as discussed in subsection 2.1.6 of this plan (PWC, 2005g; ORASECOM, 2008). (Refer Maps 23 and 24.)

A clear distinction exists between the Succulent Karoo desert system which receives mainly rainfall during the winter months, while the Nama Karoo desert system mainly receives rainfall during summer. A rough line following the coastal plain and the north-south trending mountains forming the escarpment largely represents the division between winter and summer rainfall.

Rainfall within the study area is very low and unpredictable and varies from less than 50mm in the west to about 400mm per year in the east. Annual potential evaporation exceeds 3,000mm in places, and with an average water deficit per year of about 2.6m resulting in harsh arid conditions. The area within the ARTP represents the driest portion within the entire study area, with less than 50mm annual precipitation, while the catchment around Springbok receives more than 100mm annually, as does the area close to Augrabies.

Despite the entire LOR area being classified as extremely dry, harsh and inhospitable, the altitudinal variation, from the coast to the escarpment, and that associated with the incised valley gouged by the Orange River has resulted in high biodiversity within the area as a result of the various landscapes that have been formed.





Map 24: Rainfall per Catchment

2.1.7.2 Temperature

Mean maximum temperatures within the study area range from east to west, with higher temperatures in the east. Mid-summer (January) temperatures exceed 40°C, whereas mean minimum mid-winter (July) temperatures are below freezing (PWC, 2005g).

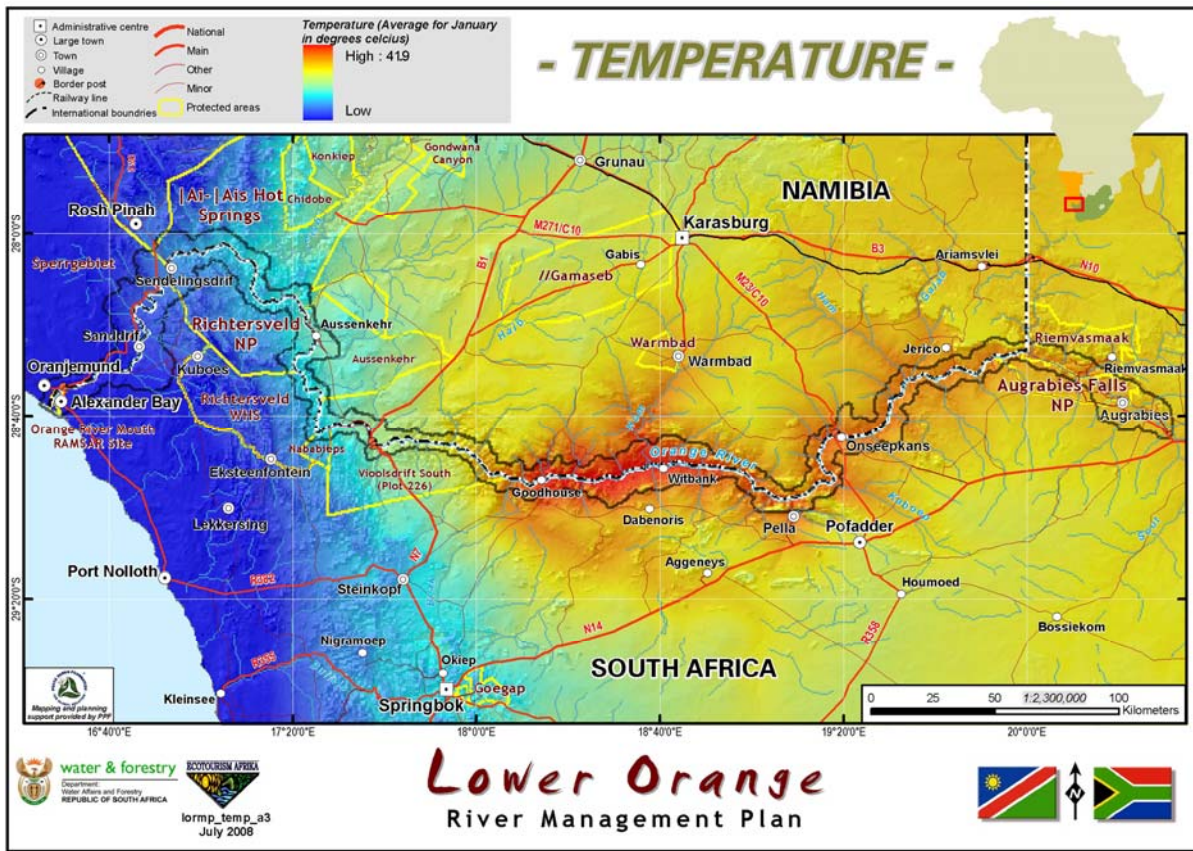
The high lying areas around Springbok, the Richtersveld mountains, and the Hunsberge illustrate the cooling effect of altitude, while the coastal plain shows the moderating effect of the Benguella current, while the impact of the Central Kalahari High Pressure System is evident in the eastern side of the study area. (Refer Map 25.)

2.1.8 Water

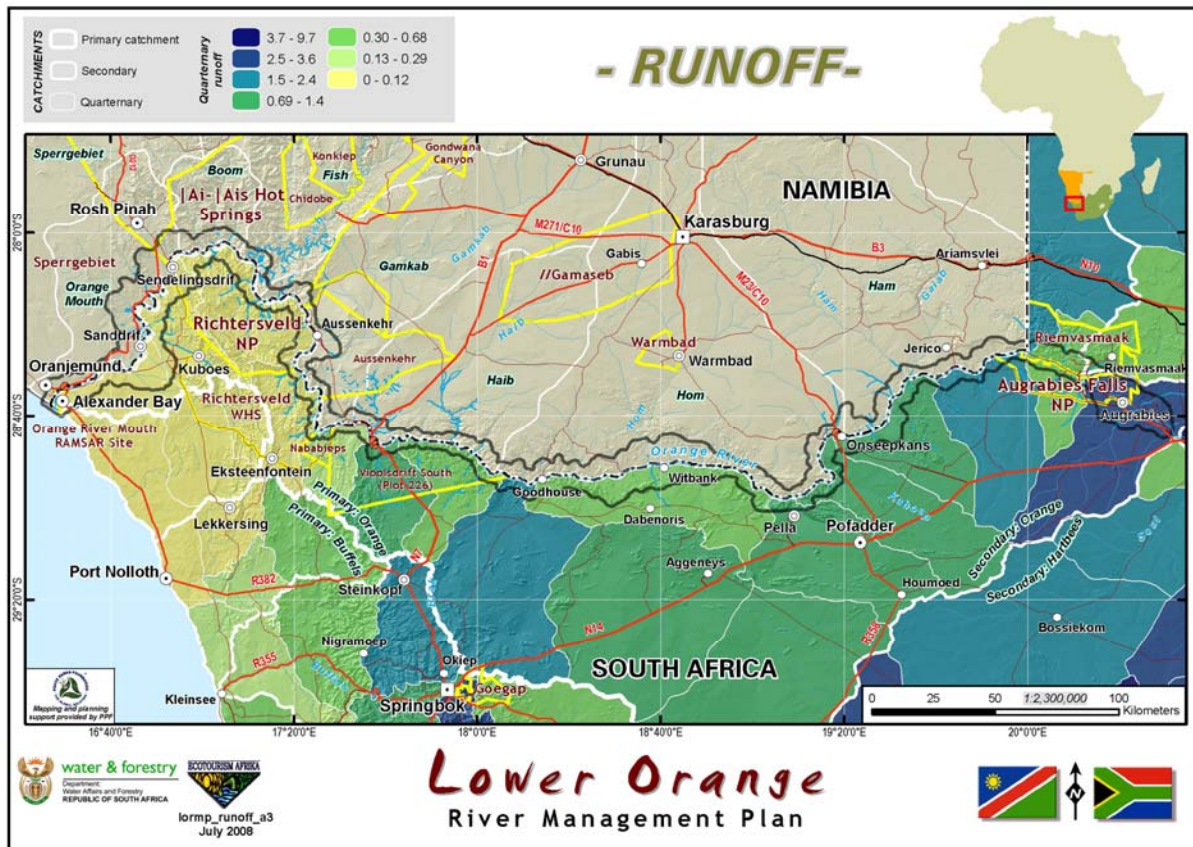
2.1.8.1 Hydrology

Namibia has 7 quaternary catchments (refer Map 24) that drain into the LOR, while 14 drain the South African side. The north-south oriented escarpment edge separates the primary catchment of the Orange River from the Buffels River catchment, while the watershed south of the river divides the secondary Orange River catchment from the Hartbees catchment.

The catchment around Augrabies drains has the highest quaternary runoff, while the catchments around Springbok have the highest runoff, albeit lower than Augrabies, for the western portion, clearly indicating the dry, harsh conditions on this side. (Refer Map 26.)



Map 25: Temperature



Map 26: Runoff

Before the construction of the major impoundments (i.e. Gariep and Vanderkloof Dams, 1400km from the river mouth) the flow in LOR was known to stop. These low-flow or no-flow periods coincided with the dry periods in the catchment area and normally occurred during August and September. Since construction, the dams and river flow has been regulated with more constant flow throughout the year in order to ensure a high assurance of supply to users as far downstream as the estuary. Releases from the Vanderkloof Dam take approximately one month to reach the river mouth. In addition to modifying the low flow regime, the dams attenuate the medium sized floods and absorb the smaller floods. Future water demand from the Upper Orange River System will reduce the availability of water in the LOR even further (PWC, 2005a; PWC 2005g).

PWC, 2005d states that the runoff originating from the Orange River downstream of the Orange Vaal confluence is highly erratic and cannot be relied upon to support the various downstream demands. Further storage is thus required. A study undertaken and completed in 2005 by the Permanent Water Commission (a joint water resource management structure established by the Governments of Namibia and South Africa) resulted in the choice of a dam site a few kilometres upstream of Vioolsdrift/Noordoewer, with current planning seeing completion of the new impoundment by 2015.

The Orange River has become highly regulated by virtue of more than 20 major dams and numerous weirs within its catchment. Abstraction and regulation of the Orange River has resulted in changed flow patterns, from a pronounced seasonal flow (a 82:18 summer to winter flow) to a nearly even flow distribution (a 59:41 summer to winter flow) throughout the year (refer Figure 13).

The sustained release of water from the large dams even in winter (mainly for hydro-electricity generation and agriculture) means the elimination of water deficits in the lower reaches of the river and the mouth now remains open almost permanently. The sustained flows in winter prevent mouth closing and back-flooding which is regarded a crucial part of the ecological functioning of especially the saltmarsh at the ORM.

The various large impoundments notably the Gariep and Vanderkloof Dams in South Africa and the Naute and Hardap on the Fish River in Namibia, have also significantly reduced summer flood peaks in the LOR and ORM by as much as 50%. The flow regime of the Orange River and ORM will be further altered as the increase in water demands further inland are accommodated.

LOR is a largely managed system but for inputs from the uncontrolled tributaries such as the Fish River. From the schematic below (refer Figure 14), one can see that some demands are supplied directly from the Gariep and Vanderkloof Dams and some by means of releases into the river. For this set up, the inflows from the Vaal are not entering the Orange River at the Orange/Vaal confluence. This is to prevent the users along the Orange River to utilise these inflows. This is in line with the current operating procedure where inflows from the Vaal are not taken into account. The Vaal inflows are, however, available to supply the river evaporation along the river, as well as environmental requirements at Augrabies and the river mouth. Inflows from the Fish River (Namibia) are only utilised to supply the river mouth environmental requirements. If the Vaal inflows are not sufficient to meet the evaporation and environmental requirements, additional water is released from Vanderkloof Dam to ensure that these requirements are fully met.

Gariep and Vanderkloof Dams are the two largest reservoirs in South Africa and are used to supply all the water requirements along the Orange River from Gariep Dam to the ORM. These demands include all the irrigation, urban, mining, environmental requirements, river evaporation and operational losses. Large volumes of water are also transferred to other neighbouring catchments.

Except for the releases through the Orange-Fish tunnel and those into the Vanderkloof Canals, all the releases from Gariep and Vanderkloof Dams, to supply downstream users, are made directly into the Orange River. These river releases are also used to simultaneously generate hydropower. Any spills from the Vaal or Fish Rivers (Namibia) or any local runoff generated in the Lower Orange are not taken into account when releases are made from Vanderkloof Dam to supply the downstream users. It is, however, extremely difficult to compensate for Vaal, Fish or any other inflows into the Lower Orange by means of reduced releases from Vanderkloof Dam, as releases take approximately one month to reach the river mouth and the existing flow gauging structures in the Orange and Lower Vaal Rivers are inaccurate for the measuring of low flows (PWC.2005b).

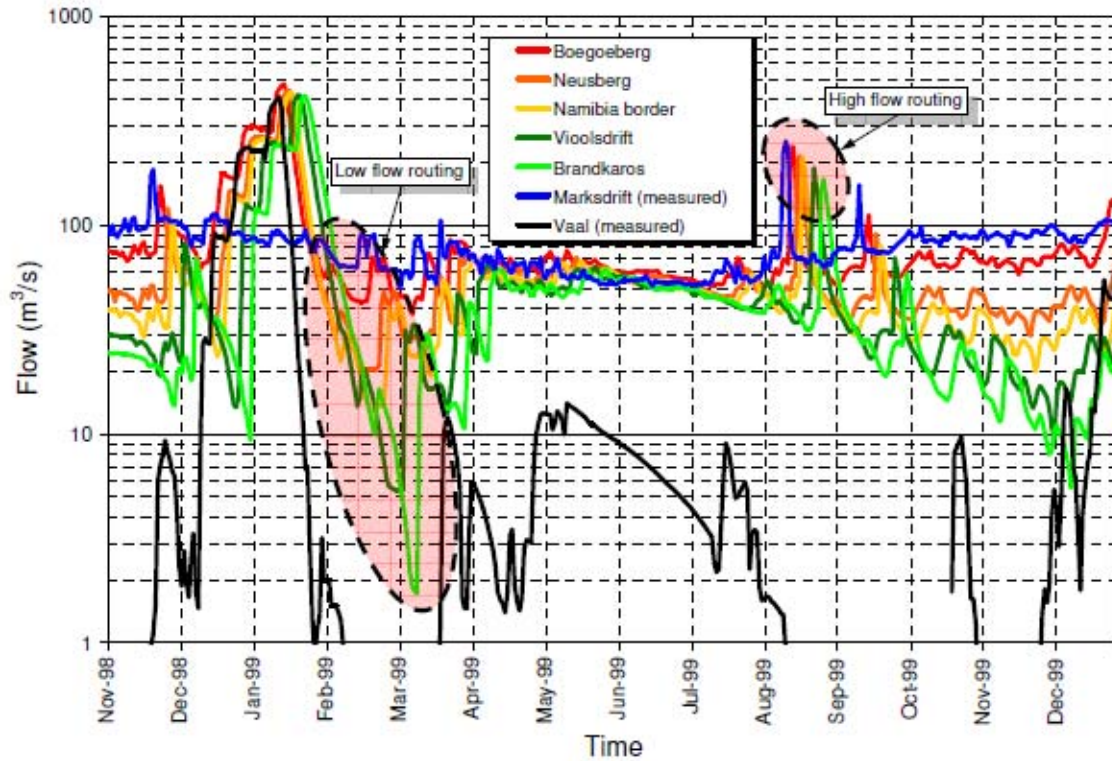


Figure 5.13: Time Lags During High and Low Flows

Figure 13: Flow-Time Graph (Namibian Border, Vioolsdrift, Brandkaros - 1999) (PWC, 2005b)

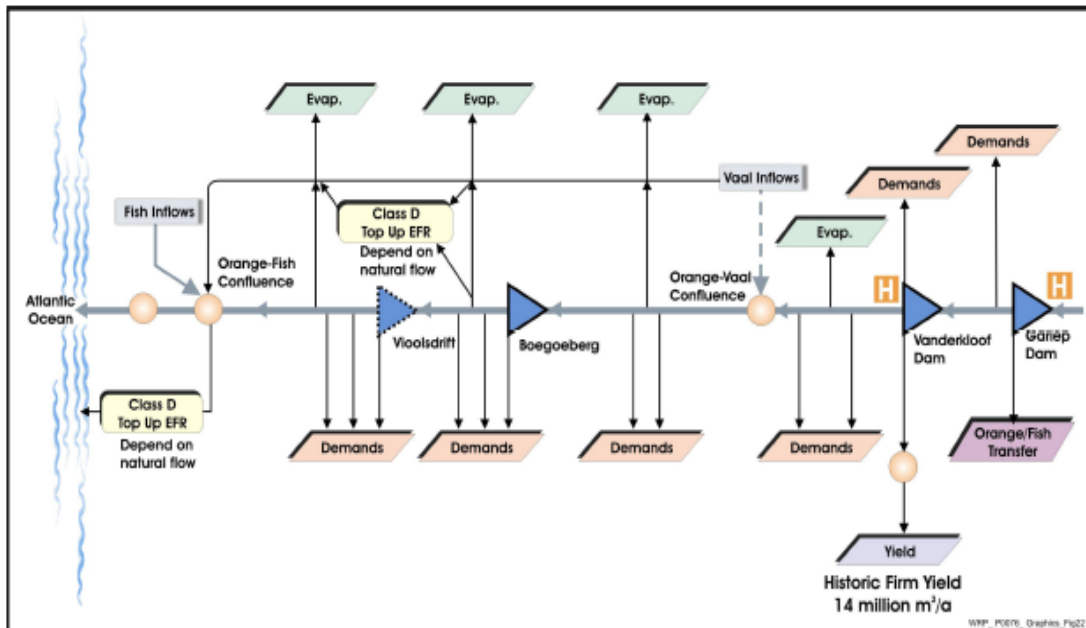


Figure 4.14: Historic Analyses Simplified System Schematic

Figure 14: Simplified System Schematic (PWC, 2005b)

2.1.8.2 Water Quality

The status of the water quality in the LOR was generally assessed to be ‘moderately modified’ in PWC, 2005b, however, the development of dams and impoundments on the Orange has resulted in a constant blackfly problem on the LOR as these dams promote eutrophication, the build up of suspended organic material which create ideal conditions for immature blackflies to increase, and changed the natural flow variation. The largest outbreaks usually occur during spring as the environmental conditions are not as harsh as experienced over summer months. During winter adult annoyance levels remains low. Although a blackfly control programme is in place along the LOR, however major outbreaks still occur (Myburgh, 2002).

The general water quality of the lower Orange River is fairly good, but the quality is deteriorating. The dissolved oxygen concentrations in the river is good (>70% saturation), the pH is relatively high (8.2), but acceptable and the general bacterial contamination is low (mean, *E. coli* <100 cfu/100 ml, acceptable for full-contact recreational use). The water turbidity is relatively low (clear water) and has decreased the past years because of a lower sediment load. The trace metal concentrations are low and pose apparently no threat to the biota in the river or to humans. Thus, the water quality is acceptable for agricultural, domestic, recreational, and industrial use.

However, the Dams have homogenized the flow regime in the river, thus the natural variability characteristics of the river have been greatly reduced. Because of fragmentation and flow regulation, the Orange River has been classified as strongly affected.

Major issues and concerns in the LOR are:

- *Increased loads of salts (salinity)*: The average Total Dissolved Salts (TDS) in the lower Orange River is relatively low (270mg/l), but is increasing with time (~4mg/l/a) and space (downstream). These increases are mainly ascribed to irrigation return flows, poor quality from tributaries (e.g. Vaal River) and reduced flows. Special concern is between Boegoeberg Dam and Kakamas, which regularly exceeds 500mg TDS/l. Impact on sustainability of agriculture is a concern. Salinisation of irrigated soil could lead to greater salt loads to the river, ultimately to the point where quality may be impaired and the uses of the water restricted.
- *Eutrophication (nutrient over-enrichment)*: The nutrient concentrations (N & P) in the Orange River are relatively low, however, serious algal blooms have occurred in the lower Orange since 2000. Algal blooms are associated with low flows and clear water conditions. Cyanobacteria (blue-green algae) species (potential toxic) have also occurred in the central and Lower Orange River that poses a threat to water users.
- *Reduced flow*: Hydrology plays an important role, not only in the chemistry, but also in the biology, of the Orange River water. Mean annual discharge in the lower Orange River has been reduced by around 62% as a result of irrigation abstractions and reduced flow from the Vaal River. The average flow rate at Vioolsdrift is currently approximately 160m³/s.

The reduced flow and artificial flow regime have negative impacts upon the water quality and biota in the ecosystem in general; it enhances salinity and eutrophication (less dilution); increase residence times that promote opportunities for algal growth and water-bloom formation, contribute to the outbreak of pest blackflies – from Hopetown to Sendelingsdrift, reed encroachment of the channel (in the middle reaches) and the formation of sandbars in the river mouth.

In the long-term, increased pressures are expected from population increases and development in the Orange River catchment, through aspects such as allocation of additional irrigation water, will increase the pollution levels, which will probably necessitate additional measures and strategies to maintain acceptable water quality in the river.

Monitoring of system change is crucial, but more importantly the system must be audited against the resource water quality objectives, to ensure that the goals of management are met and the system is maintained in the desired state (Roos, Pers Comm, 2008).

2.2 CULTURAL ENVIRONMENT

Thornton states that “*to the cartographer the river seem to divide the land, and to the politician this is certainly so. But to the locals, the !Gariiep [LOR] is a cultural epicenter around which people have always congregated. The river is not only a lifeblood in the desert, but a place which the Nama of both South African and Namibia revere as a thread tying them together, despite its political role as a boundary designed to separate people and nations.*”

The LOR, a permanent source of water within an arid landscape, has been populated continuously during prehistoric times and within the last 2000 years by Khoekhoen herders and San hunter gatherers. The river also provided a conduit by which a number of early European travelers ventured into the interior.

Northern Namaqualand and southern Namibia were occupied by the Great Namaqua who kept goats, sheep and cattle. The Namnykoa (a highly riverine group) and Einiqua occupied the area close to and east of the Augrabies Falls. Interspersed with these groups were smaller San communities and other ‘Hottentot’ groups who resided in an uneasy relationship with their more powerful neighbours.

By the 1770s trekboers had penetrated the interior, and so began a vicious frontier war with the indigenous groups. By the early 19th century, various missionary groups began to exert their influence along the LOR and the descendants of the Khoekhoen were limited to mission land in various parts of Namaqualand and the marginal lands of the Richtersveld where their language, Nama, is still spoken today.

Prior to the construction of the Vioolsdrift high-level bridge in 1956, most vehicular traffic to and from Namibia was routed via the main road through Nakop, or by way of several river crossings, or drifts, which had been in use since the late 1700s. Among the most important crossing points were those at Goodhouse and Raaman’s Drift, linking Namaqualand and the newly established mission settlement at Warmbad and the Namibian interior. These early colonial farming, trading and mission settlements and river crossings are of varying historical importance.

The archaeology of the area is to all intents and purposes, unexplored and unknown; more; however, is known about the history thanks to work of early travelers and more recent research. Information from SAHRA, and other sources, indicates that there are sites of cultural significance at:

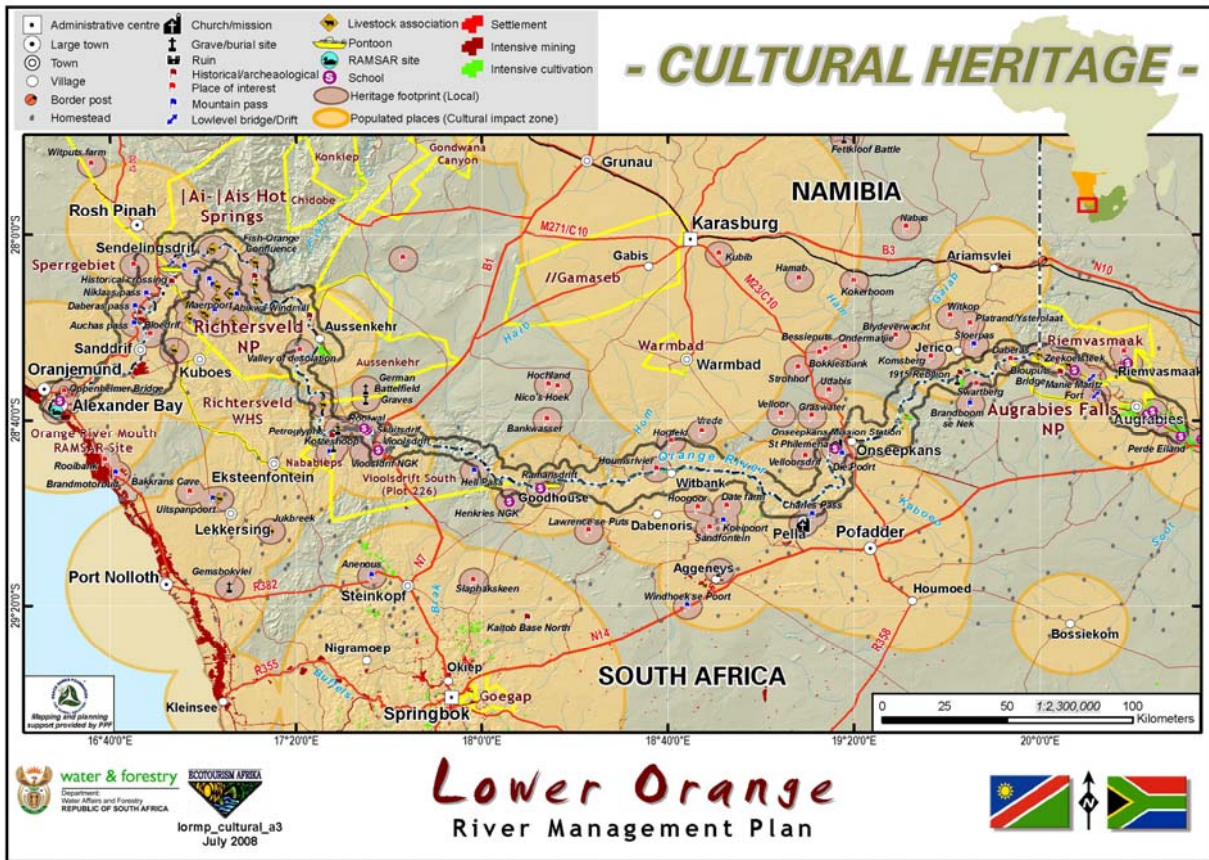
- *Skuitdrift*, historic river crossings; German military outpost built in 1901, ruins and graves;
- *Warmbad*, both in South Africa and Namibia – mineral springs;
- *Pella*, a Catholic mission church built in 1878, date plantations;
- *Onseepkans*, a declared national monument, mission and church as well historic bridge;
- *Goodhouse*, graves and church, historic buildings;
- *Daberas*, ruins;
- *Riemvasmaak*, archaeological sites;
- *Richtersveld*, unique herder sites; and,
- *Hohenfels*, *Grootpens Island*, *Sendelingsdrift*, Historical Police outposts.

Additionally, it is predicted that:

- On the *river banks and silt deposits*, buried pottery and fish bone sites of ancestors of the Nama and burial cairns of the Nama are to be found. Older San and Holocene sites have been documented on the silt flats and in any small rock shelters or overhangs close to the river. Historic buildings (early farms and missions), graveyards, possible places of conflict (Anglo-Boer war and Korana uprising) are also to be found;
- On *flat rocky outcrops*, especially dolerite, rock engravings may be found of the San ancestors of the Nama; and,
- Old *river terraces and ridges*, as well as tributaries and steep sided valleys, may hold general scatters of archaeological material, especially Early and Middle Stone age.

Some of these sites have been severely impacted by vineyard cultivation (PWC, 2005g).

The main cultural landscapes along the river are that of the Bondelswarts is situated between Warmbad and Pella, with subsidiary villages at Witbank, Goodhouse and Onseepkans, the Riemvasmaak Community, and the Richtersveld Community. Karasburg and Springbok are the main centres, with Port Nolloth, Alexander Bay, Rosh Pinah, Steinkopf and Pofadder serving as rural centres (refer Map 27).



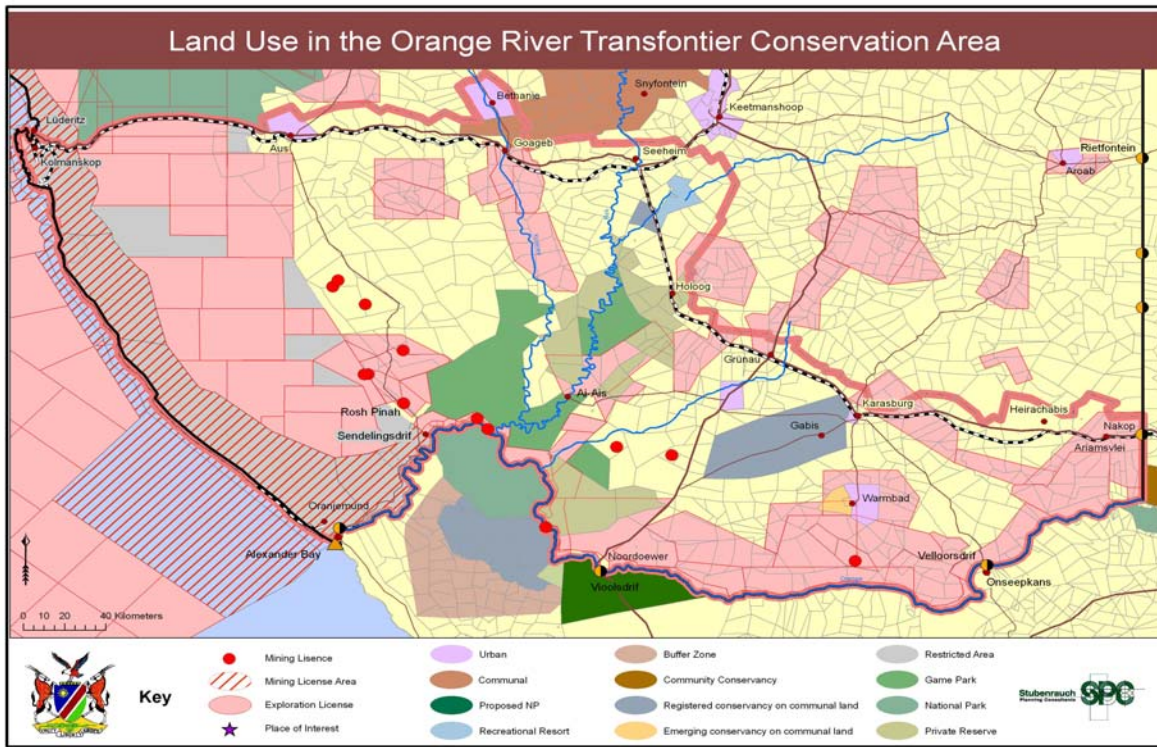
Map 27: Cultural Landscape

2.3 BUSINESS ENVIRONMENT

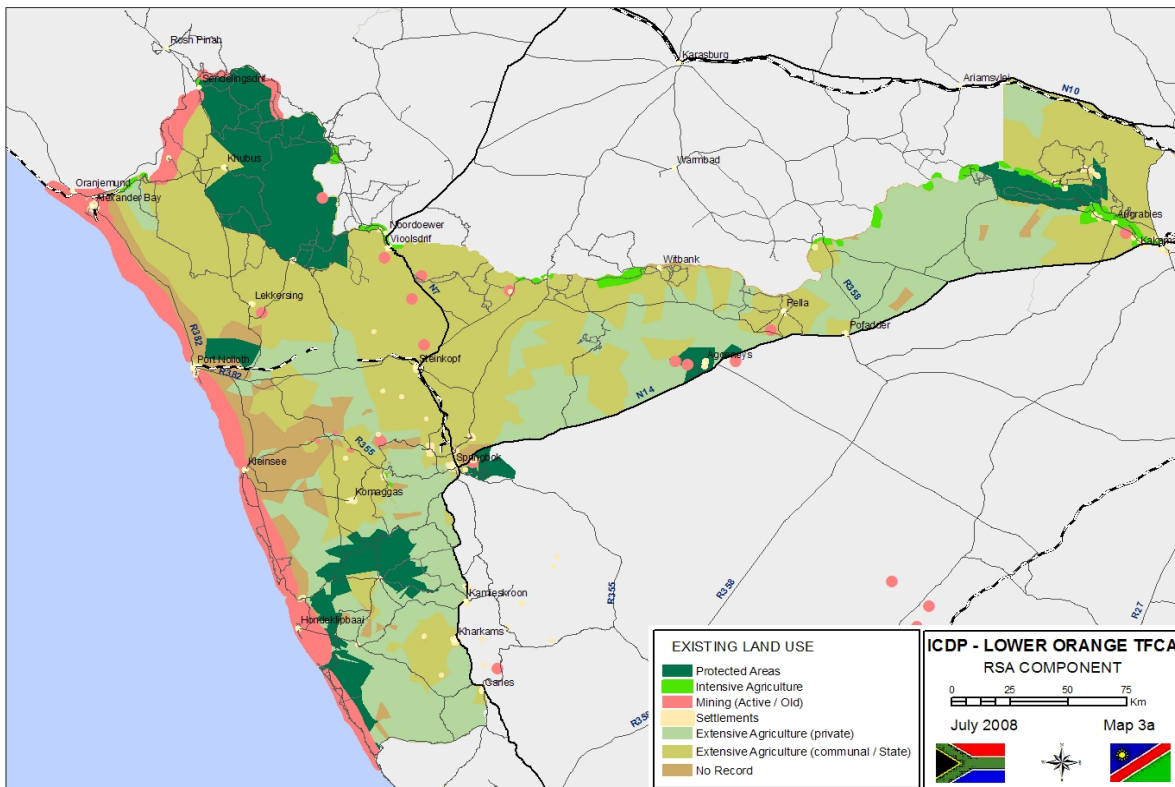
2.3.1 Current Land Use Patterns

The largest primary contributions to the economy are made by mining and agriculture. Mining activities consist mainly of extraction of alluvial diamonds and a variety of minerals (zinc, etc.). Extensive irrigation occurs at locations along the LOR, where the tendency has increasingly been towards growing high value orchard crops. Sheep and other livestock farming are found where the climate is favourable. Important irrigation development along the river include the Blouputs Farms close to AFNP; the Vioolsdrift/Noordoewer Joint Irrigation Scheme, which is managed by the Joint Irrigation Authority; Aussenkehr in Namibia, and the Namaqualand and Pella irrigation areas in South Africa. (Refer Maps 28 and 29.)

Demographic projections show a steady decline in the population in the region over the next 25 years. Economic activity is likely to remain dependant on mining and irrigation for the foreseeable future, with modest contributions from ecotourism. There is considerable seasonal migration of labour. Outside the small towns along the river there are negligible infrastructure or community services. Any significant developments will make a meaningful contribution to the regional economy and this is a priority, specifically for the Namibian Government (PWC, 2005a).



Map 28: Current Land Use – Namibia



Map 29: Current Land Use – South Africa

2.3.1.1 Mining

Besides the Aussenkehr Nature Park (ANP), the entire Namibian shoreline along the LOR, from Ariamsvlei to Oranjemund, is impacted by mining, either as Exploration Licence Area, or as active mining area, as within the Sperrgebiet. Even within the ANP certain areas are actively mined.

Even though the entire river course has prospecting licences allocated, and mineral deposits are known, the area is not extensively mined. Kimberlite deposits have been identified in the Ariamsvlei area, as well as within the Ai-Ais Hot Springs Game Park. Zinc deposits exist at Scorpion and Rosh Pinah mines, as well as several other locations that are currently not actively mined. Extensive uranium exploration is taking place throughout the area, specifically within the Sandfontein area and environs. Approximately thirteen mining licences exist within the Namibian component, with only three directly adjacent to the river, two occurring within the Ai-Ais Hot Springs Game Park, and one within ANP. These mines do affect the quantity and quality of the water, since water is abstracted from the river and effluent does enter the river course, either as return flows or as seepage.

Within South Africa the extent of active or old mining areas along the river is limited to the Richtersveld area, where extensive mining is taking place at Sendelingsdrift, Oena, and Aussenkehr, as well as prospecting at between De Hoop and the Fish Confluence, and Richtersberg. Between Sendelingsdrift and the ORM, extensive mining is taking place with huge impacts on the river, aesthetically and environmentally.

Mining impacts do also occur throughout the TFCA target area, such as Black Mountain, Aggenys, Okiep etc, and though removed from the river, requisite mining infrastructure such as the pump station at Pella still negatively influence the environmental quality and experience of visitors and locals alike.

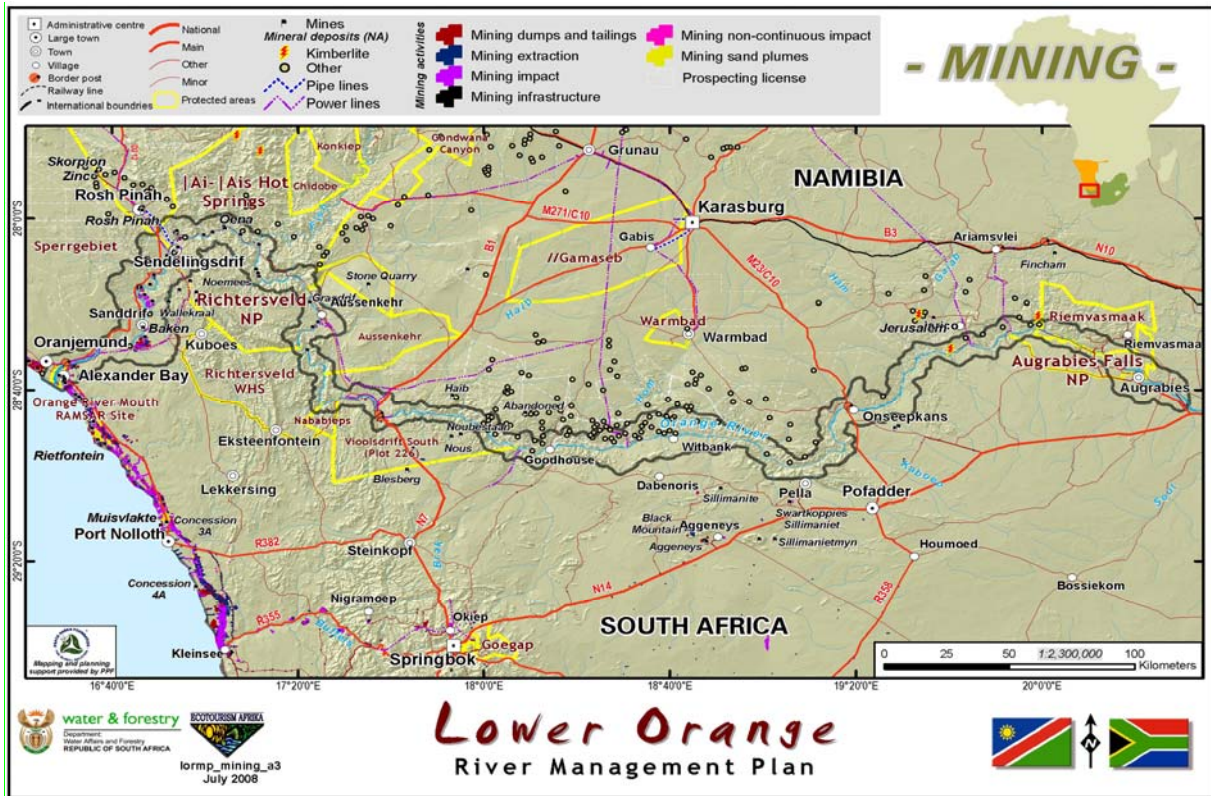
When mining is deemed to be the most viable and sustainable land use option it should be allowed, yet these mining activities must comply with all norms and standards pertaining to international best practice, as well as guidelines regarding prospecting and mining in sensitive environments. Host communities should benefit directly from these mining activities, and not merely serve as a source of labour.

Most of these mines would not be able to operate without access to the water of the Orange River, yet this access should be authorised, and compliance enforced. Currently, numerous examples of non-compliance with the norms and standards for impacts in terms of Section 21(c) and (i) water use authorisations in terms of the National Water Act, 1998 (Act No. 36 of 1998) [NWA] in South Africa exist, and these are directly affecting the quality of the water, and the functioning of the aquatic ecosystem. (Refer Map 30.)

2.3.1.2 Agriculture

Intensive agricultural development along the LOR is limited to the accessible alluvial deposits, and can be found at Augrabies, upstream of the AFNP; Blouputs and between Daberas and Onseepkans Mission; Coboop; Pella; Witbank; Goodhouse; Henkries; Vioolsdrift/Noordoewer, Aussenkehr; and, Brandkaros.

Extensive agriculture is spread throughout the region with the main focus being on stockfarming. The eastern portion of the South African side is dominated by private commercial farming, while the area from Onseepkans to the ORM is characterised by communal farming. Even though the RNP is a proclaimed protected area, abutting the Richtersveld WHS, extensive livestock farming does take place within these conservation areas. Stockfarming within the state protected areas of Namibia is being phased out, as is the presence of some intensive agricultural development close to the Fish River confluence with the Orange River. Within the rest of the area, some stockfarming does take place, albeit limited, due to the harsh arid conditions. Many of the private farms in Namibia are converting to game farming, utilising hunting and tourism as viable land use options, a trend that should spread to the rest of the area.



Map 30: Mining Impacts

2.3.1.3 River-based Operations (Tourism)

Currently, the whitewater rafting, canoeing and kayaking industry utilises the LOR extensively for commercial and private river operations. These stretch along the entire length of the river and are currently largely uncontrolled. Due to this the formalised industry, both in Namibia and South Africa, have, through the APA, requested control measures to assist in unlocking the ecotourism potential of the river in a sustainable and equitable manner.

The current use patterns (refer Maps 31-33) show that there is utilisation in terms of put-in and take-out points, river camps and campsites, and supporting infrastructure, within the following areas:

- AFNP;
- Riemvasmaak/Blouputs area;
- Byna Bo;
- Raap-en-Skraap;
- Warmbad;
- Onseepkans;
- Oranjevalle Gorge;
- Pella;
- Witbank;
- Goodhouse;
- Henkries;
- Violsdrift;
- Noordoewer;
- NNR;
- Richtersveld WHS;
- RNP;
- Aussenkehr; and,
- Ai-Ais Hot Springs Game Park.

The levels of utilisation vary from occasional use to crowded peak periods, as can be seen between Noordoewer/Vioolsdrift and Aussenkehr, during the Easter and the Freedom Day/Workers Day long weekends, and other holiday periods. During these periods thousands of users congregate on this section, creating environmental and experiential challenges for commercial operators who do not have any control over the usage patterns or numbers. This affects the viability of commercial operations significantly.

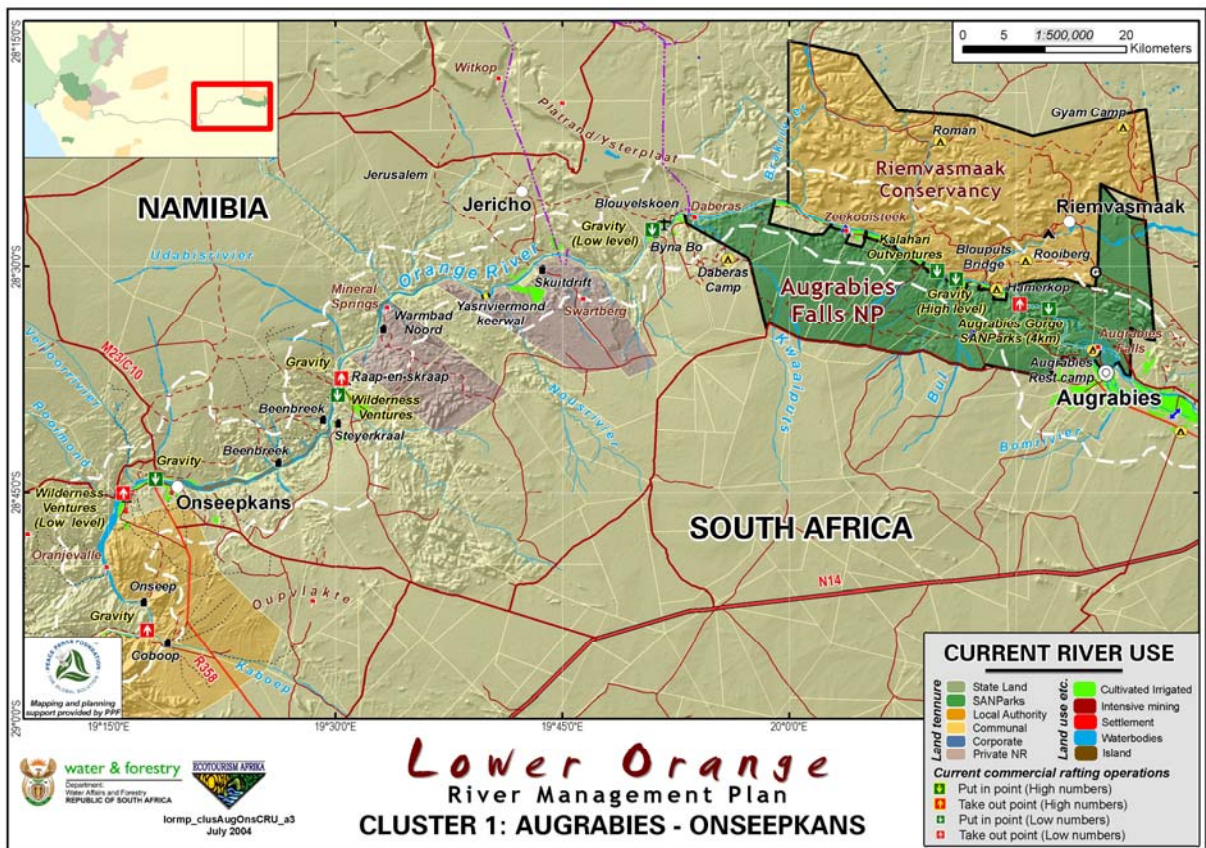
Other portions of the river provide similar, if not better experiences, yet do not seem to be popular due to the difficulty associated with access, logistics and distance from the market.

Some of the areas such as the Noordoewer/Vioolsdrift area provide tourism infrastructure for the river based operations, including camps, campsites, parking, logistical support, guides and shuttles, while other areas provide no supporting infrastructure, besides access along tracks and farm roads.

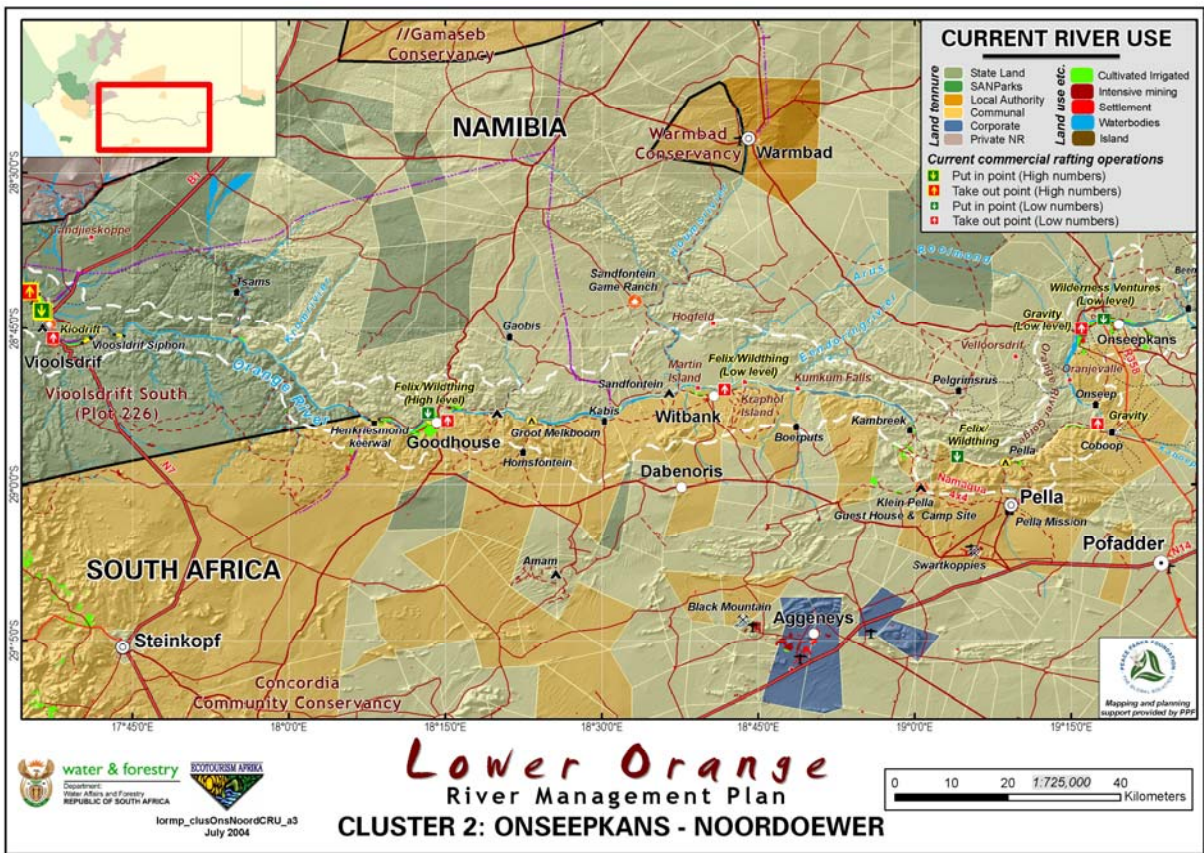
Benefits for the host communities emanating from the river based operations are difficult to ascertain due to the uncontrolled nature of the river use. This is not conducive to the formation of good institutional relationships and needs to be addressed.

With the current usage along the Noordoewer/Vioolsdrift to Aussenkehr stretch, mainly being possible from the Namibian side of the river, due to the presence of good roads and associated infrastructure, the South African operators have experienced problems with border control authorities regarding access, entrance and exiting procedures, as have the Namibian operators bringing in provisions from the South African side. These challenges have been addressed within this document, and are discussed in the relevant portion of Section 3, discussing the Plan.

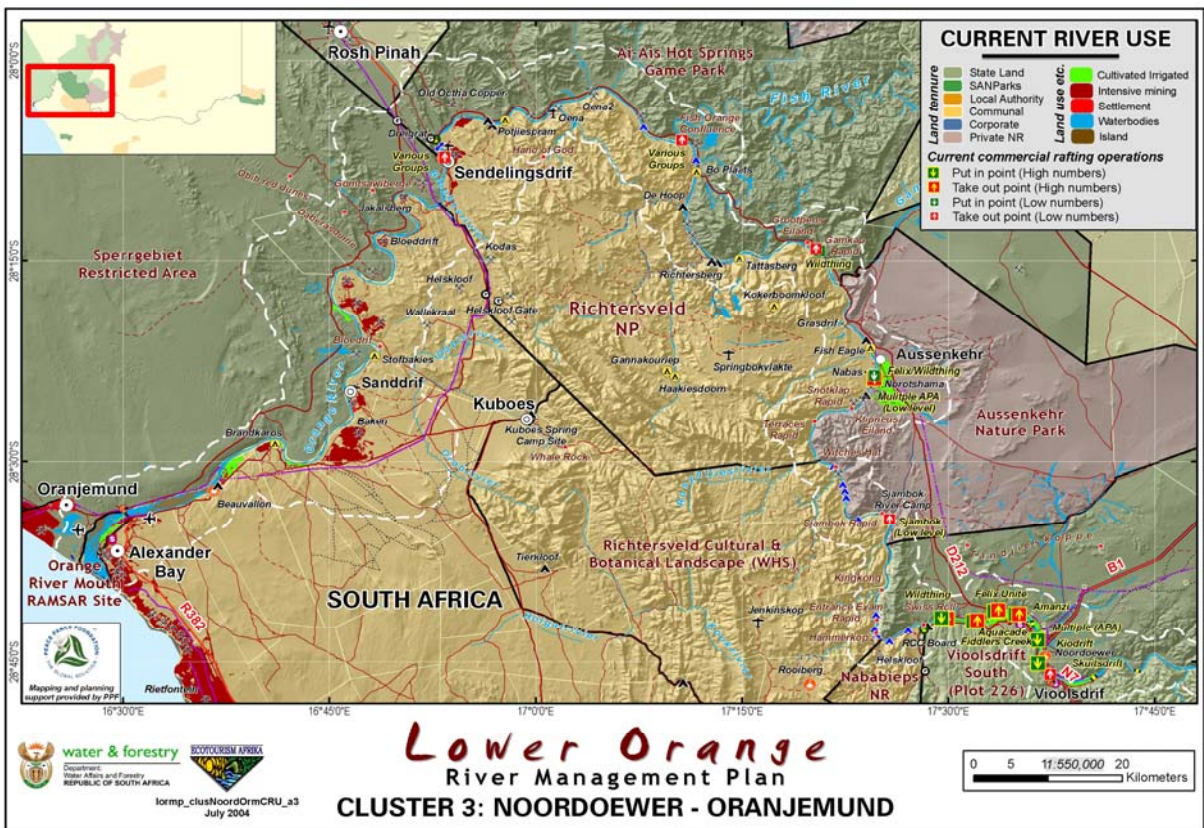
River usage below Sendelingsdrift is extremely limited, mostly linked to a bit of boating from the various camps along the river. This portion of the river is not ideal for rafting, canoeing or kayaking due to the gradual gradient, low water conditions and dominant wind direction.



Map 31: Current River Use - Augrabies to Onseepkans



Map 32: Current River Use – Onseepkans to Noordoewer



Map 33: Current River Use – Noordoewer to Oranjemund

2.3.2 Detractors to Ecotourism

Ecotourism requires relatively undisturbed and pristine environments, both natural and cultural, to optimise guest experiences. Various land use practices detract from this value, and while providing insight into current resource utilisation patterns, these practices often complicated high quality experiences. Below the main detractors within the LOR area are discussed, specifically focussing on the impact of these activities on ecotourism, and possible mitigation measures discussed.

2.3.2.1 Mining

As a land use, mining has a tremendous visual impact on pristine landscapes, and within the LOR area, an area with localised complex landscape, yet lacking any vegetation with sufficient height and density to hide mining activities. Additionally, the process of mining creates audio impacts in an environment which often lacks external sounds, bar wind and water along the river, and even then this effect is minimal.

Even when mining activities are low key, the scars remain visible for decades, as can be seen from tracks over sensitive habitats, prospecting pits, claims etc. Major impacts such as those present at Sendelingsdrift, Baken, and close to the Mouth, from both active and dormant mines, have completely and irreversibly transformed the landscape. Being within such a remote environment, the contrast between an isolated desert landscape and these mines, and their visible impacts and noise, affect guest experiences more than in urban and industrialised settings.

Often the infrastructure required for mining activities are far removed from the actual mine, causing psychological separation. This is evident at Pella, where the pump station and related infrastructure impact on the river and the surrounding tributaries, while the mine is located approximately 70km away.

When impacts such as those visible at Oena Mine, involving dredging and coffer dams within the river bed, these activities directly impact on the quality of the experience that ecotourists receive. Critical to sustainability is ensuring that all these impacts are regulated, utilising guidelines such as the South African Department of Water Affairs and Forestry's (DWA) procedure for Section 21(c) and (i) water use authorisations in terms of the NWA.

2.3.2.2 Agriculture

Broadly, agricultural activities can be divided into two main categories, the first being irrigation, and the second livestock farming. At a finer scale both can be divided into communal and commercial.

Both have an impact on the environment, and consequently on the quality of guest experiences. Culturally linked to the development of the region, both forms of agriculture trace a history of human use, yet modern trends have resulted in large impacts, visually, environmentally and socially, in an area where agriculture is not expected. These developments along the river terraces have traditionally been very localised yet with improvement in flow certainty these have developed into large, heavily impacted and transformed landscapes, such as evidenced at Aussenkehr.

Additionally, agriculture has a two fold impact on the integrity of the riparian habitat, firstly irrigation causes disturbance which is often infested by alien invasive species, which in turn are spread by livestock, severely changing the structure and composition of the riparian vegetation.

Livestock tend to concentrate along the river courses, utilising the vegetation through grazing and browsing, and although this system has existed for millennia, the patterns are changing by concentrating livestock in areas in seemingly unsustainable herd sizes, rather than following traditional pastoral practices.

2.3.2.3 General Infrastructure

Roads, power lines, pipes, pumps, weirs, canals and bridges all contribute to unlocking the economic potential of the area. The impact of this infrastructure on the environmental character is however often forgotten, since similar to the impact of mining and agriculture, guests do not expect to find good roads,

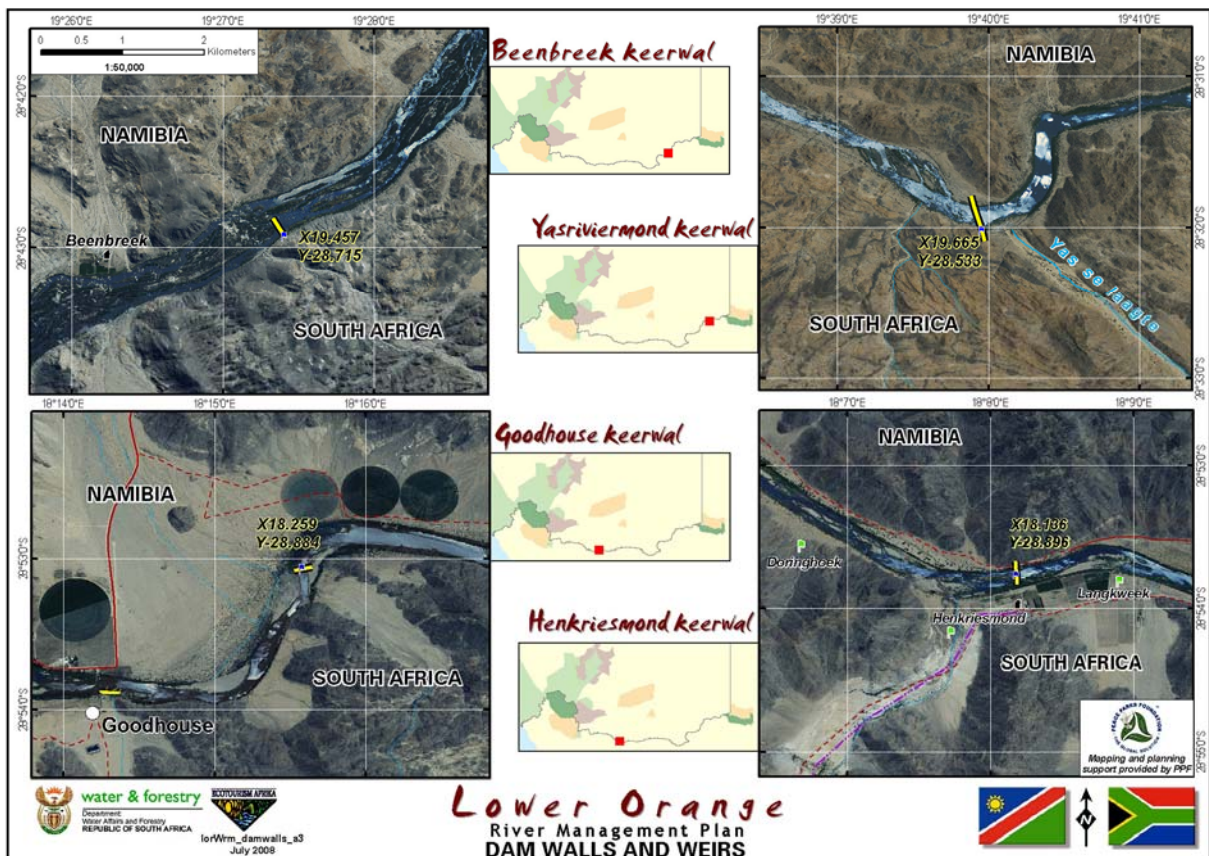
telecommunications, etc, when visiting remote and isolated environments. Conflict between visitors and local residents occurs regarding what is required when visiting an area, as opposed to living in the area. This conflict needs to be managed.

Along the river, and within the river course, several structures impede the flow of the river, or change the characteristics of the beds and banks of the river, including amongst other pumps, pump stations, weirs and siphons, such as those at Beenbreek, Yasrivier, Pelladrift, Goodhouse, Henkriesmond, Vioolsdrift and Noordoewer. Additional infrastructure along the river includes the pont and NamWater pumpstation at Sendelingsdrift, as well as the bridges at Blouputs, Onseepkans, Noordoewer, and Oranjemund. (Refer Maps 34-36.)

Existing tourism usage patterns, such as the profusion of 4x4 trails and routes within the RNP, Richtersveld WHS, NNR, the Namaqua 4x4 route between Pofadder and the Richtersveld, the 4x4 route within the ANP, the 4x4 route through Riemvasmaak; informal camping, picnicking, and fishing within the Ai-Ais Hot Springs Game Park, all have infrastructure, either permanent or temporary, that influence the river experiences.

Within the Richtersveld this infrastructure can include the camps, ablutions and related infrastructure at Tattasberg; Richtersberg, De Hoop, Pootjiespram and Sendelingsdrift, while along the rest of the river, several of the private and communal areas have camps, campsites and infrastructure along the river.

If incorrectly placed, developed and utilised, this tourism infrastructure can detract rather than contribute to the experience of guests visiting or using the river. The boat storage facility within the Augrabies Gorge, used to store the canoes that are utilised as part of the 3-in-1 adventure package is an example of inappropriate development, detracting from the environmental character of the area.



Map 34: Dam Walls and Weirs (Beenbreek, Yasriviermond, Goodhouse, Henkriesmond)



Map 35: Dam Walls and Weirs (Vioolsdrift, Nooroewer)



Map 36: Bridges and Pump Stations

2.3.2.4 Fishing

Under the guise of subsistence or recreational fishing, illegal commercial fishing activities using gillnetting, longlines etc are taking place, impacting not only on the quality of guest experiences but also on the biodiversity of the river, as well as the abundance of fish. Aussenkehr represents the area where most of these illegal fishing activity is taking place, and since this occurs within, or has a direct impact on a wide variety of protected areas such as NNR, the Richtersveld WHS, the RNP, Ai-Ais Hot Springs Game Park and the ANP, these illegal activities should be curtailed and the impact monitored.

Negative comments can be expected from local residents stating that these measures will negative impact on their food security and livelihood, as well as recreational and subsistence use of the river. However, it is believed that if local fishermen use conventional techniques rather than gillnets, and even mosquito nets, the sustainability of fishing can be guaranteed. An additional mitigation measure would be to implement an aquaculture programme at Aussenkehr, utilising both off-channel raceways and ponds, as well as cages for fish breeding programmes, as a way of providing alternative protein sources for both local and commercial consumption, negating the need for gillnetting.

This will improve the quality of fishing in the river, without reducing access to the river for subsistence use. The occurrence of high numbers of yellowfish in the storage dams adjacent to the river, provides an indication that fish grow well in these irrigation ponds. By forming a partnership which aims at restocking the river with endemic yellowfish, and providing good local species for aquaculture, it is believed that not only can commercial viability be achieved, but ecological and biodiversity objectives met as well.

2.3.3 Contributors to Ecotourism

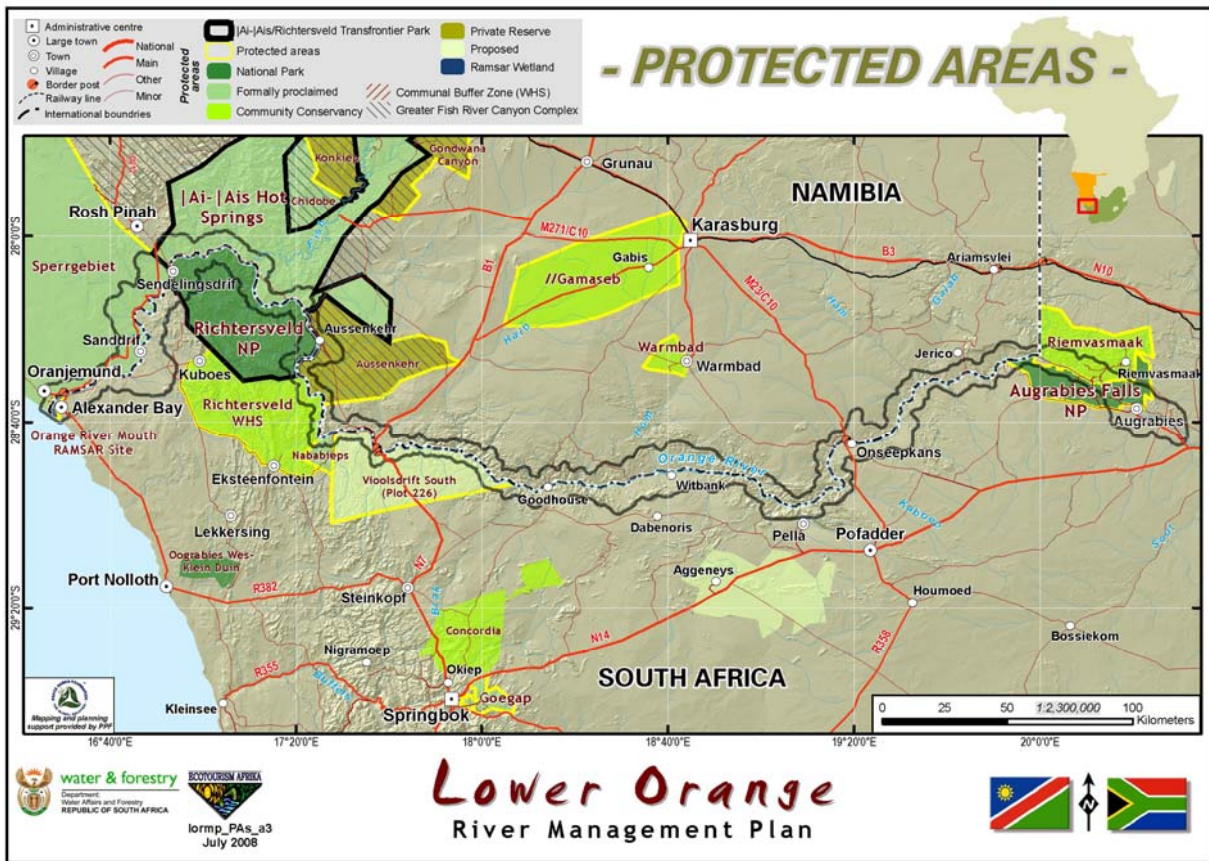
Due to the threats posed by mining and agricultural development to the successful unlocking of the ecotourism potential of the LOR, two aspects contribute significantly to enhancing the ecotourism value of this area. These are the protected areas - public, private and communal, as well as some of the existing tourism infrastructure in the area.

2.3.3.1 Protected Areas

Despite the beauty of the area, linked to regional biodiversity value, the LOR area is largely under protected, yet numerous areas of international, national, provincial and local significance do occur in the area. Within the broader TFCA target area, five protected areas of national significance occur, with the Richtersveld WHS representing a site of world significance, while several private sector conservation initiatives, such as the GFRCC, and community conservancies have recognised the value of conservation as a viable and sustainable land use option. (Refer Map 37.)

The various levels of protection afforded to the resources provide a measure of commitment which ecotourism operators can use as support for their interpretative experiences, since the proclamation of these protected areas is a tangible statement of their significance, albeit international, national, regional, or local. Products within these areas not only have the status of operating within protected environments, but also contribute to garnering support for these fragile environments, and provide benefits for the communities which host these resources, further contributing to their protection

The possibility exists that several additional protected areas could be established either as country specific, or as TFCAs. These include the state land between Henkries and Vioolsdrift on both sides of the river, the area between Onseepkans and Henkries as communal land worthy of protection, possibly linked to the conservation initiatives in Namibia, and the area between AFNP and Onseepkans, both sides of the river. These contiguous areas could form the basis of the proposed TFCA for the LOR area.



Map 37: Protected Areas

2.3.3.2 Tourism Infrastructure

As discussed in the previous subsection discussing the detractors to successfully unlocking the ecotourism potential of the area, specifically the section on the negative role that general infrastructure, and specifically incompatible tourism infrastructure, could have on the river based operations, the converse is also true.

Well designed, developed and utilized tourism infrastructure in the form of lodges, camps, and campsites, as well as appropriately placed roads, contribute significantly to unlocking the ecotourism potential of the river. This includes access roads, signage, storage facilities, maintenance facilities, accommodation and staff housing.

Within this management plan for the LOR existing tourism facilities within the shared resource area have been analysed to ascertain how these facilities can contribute to the river based products without negatively impacting on markets, current products and usage patterns. This includes the proposal that a product utilizing luxury safari camps be developed within the ARTP, and the proposal for a river camp at Henkries close to the date plantation, due to the ease of access and logistics, and the use of wilderness style camps when access is restricted or impossible.

When the tourism and general infrastructure is better within a specific country, it is proposed that the river based products be based within that country, and where access is equal, that the products be offered from both sides. This will negate the need for additional infrastructure to support the river based tourism products, thereby reducing the environmental impact within this sensitive and brittle environment. In the eastern side of the study area the infrastructure is largely South African based, while in the west it is mainly Namibian, except for the coastal plain, which is once again South African based.

2.4 TENURE ENVIRONMENT

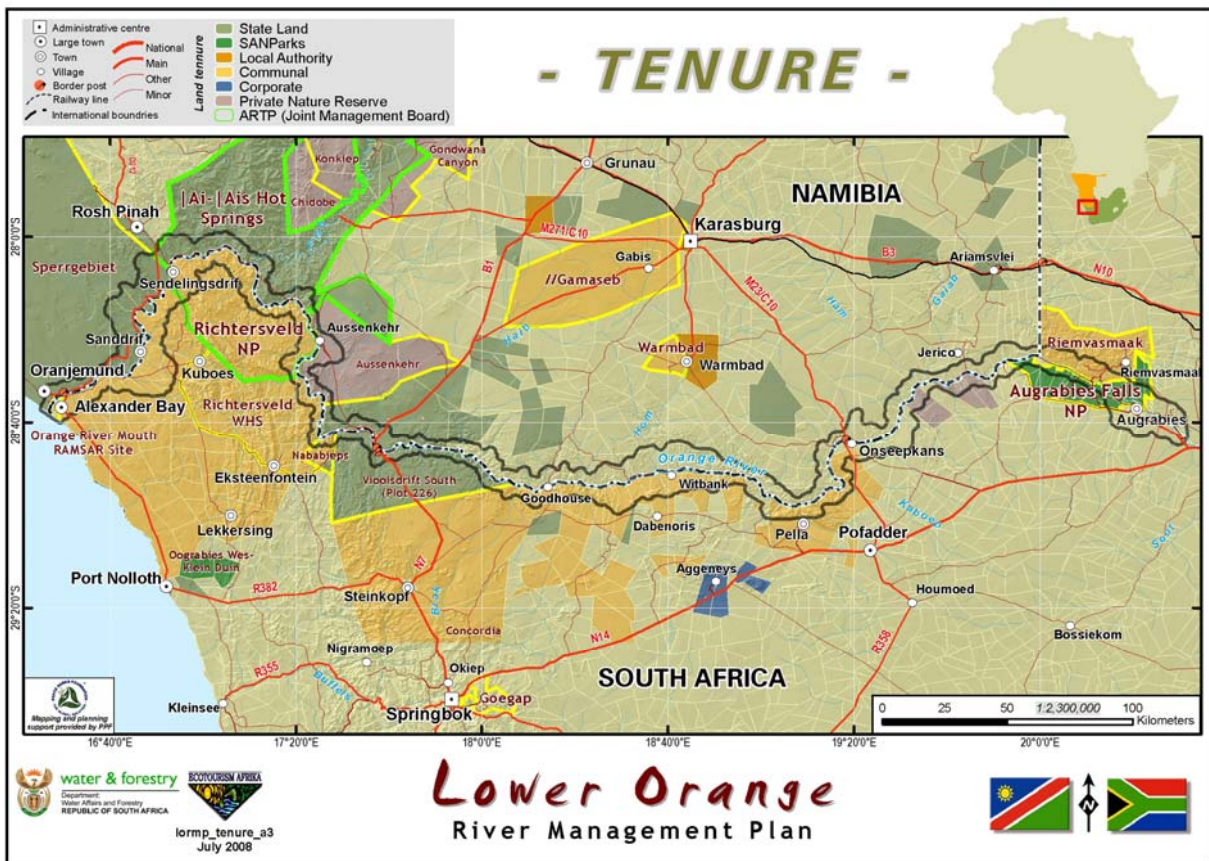
2.4.1 Land Ownership and Use

Land ownership within South Africa is changing as a result of the efforts of government to redress past imbalances as a result of gender and racial discrimination. These initiatives are providing communities along the LOR with formal recognition as landowners, a status that has been denied to them for decades.

Within Namibia, similar land restitution and reform programmes are taking place, focusing on both individuals and communities. The community conservancies throughout Namibia are a key example of where communities, as legal entities, receive access to land for a specific land use practice. Under specific requests from the Minister of Environment and Tourism, options to provide access for communities to the river and the possible creation of a conservancy are being investigated.

Unlike South Africa, Namibia's land ownership is equally divided between the State and private sector. Communal ownership dominates the LOR from Onseepkans to the ORM, with the exception of a small portion of state land between Henkries and the Richtersveld WHS, reflected by state land in Namibia, creating the possibility of establishing an effective transboundary management area between these two contiguous units of land. ANP represents the only portion of privately managed conservation land along the river, west of the main B1 route.

Within the Augrabies – Onseepkans Cluster private land dominates on either side of the river, yet the Riemvasmaak Community does own a large portion of land on the northern side of the river, directly contiguous with the AFNP. (Refer Map 38.)



Map 38: Land Ownership and Use

2.5 GOVERNANCE ENVIRONMENT

Within the governance environment aspects pertaining to the administration of the region will be discussed, as well as the legal framework, existing institutional arrangements, and the planning framework.

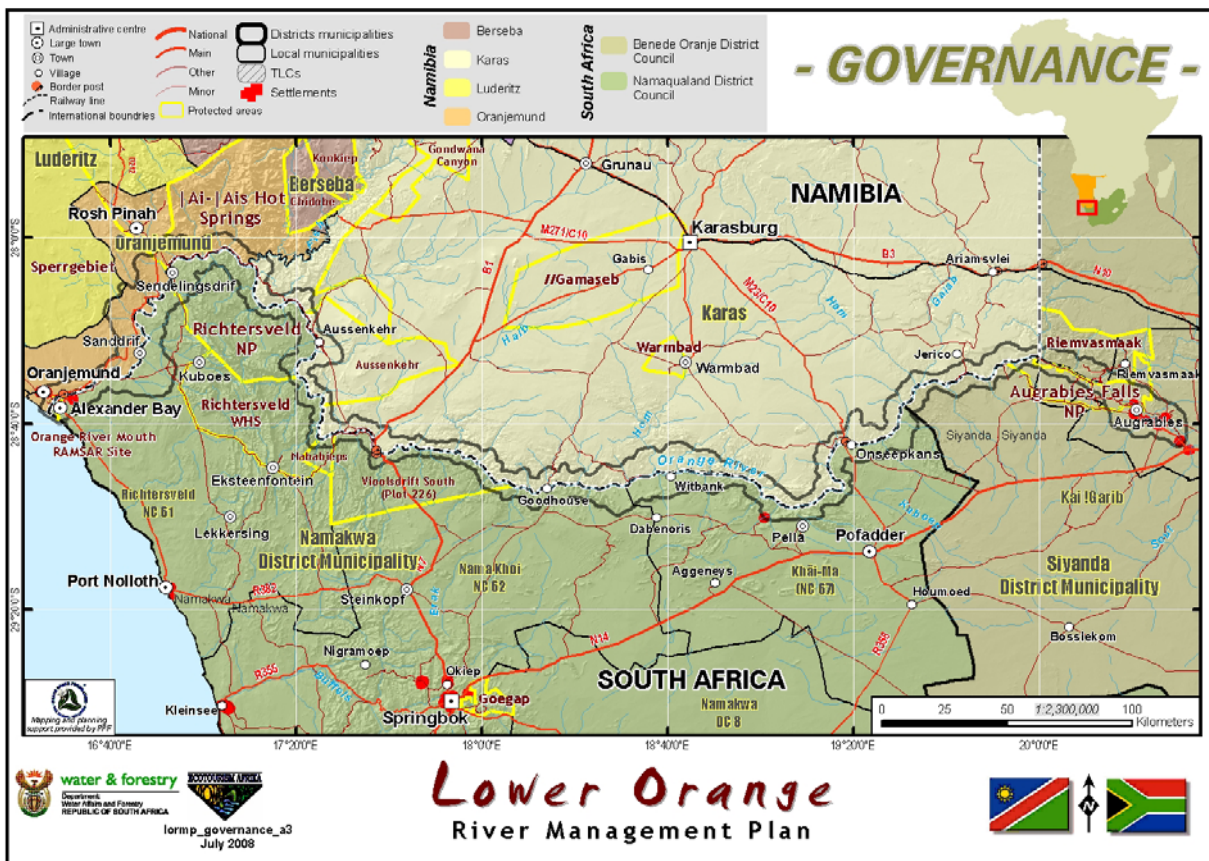
2.5.1 Administration

2.5.1.1 Cadastral Information

Split across two sovereign countries, the LOR area is characterised by the Orange River which serves as the international boundary, separating the Karas Region in Namibia from the Northern Cape Province in South Africa. Within southern Namibia the Region is divided into four administrative units (refer Map 39), namely Berseba; Oranjemund; Luderitz; and, Karas.

Within South Africa the Northern Cape Province is divided into four local municipalities, falling under two district municipalities, namely:

- Namakwa District Municipality:
 - Richtersveld NC61;
 - Nama Khoi NC62;
 - Khai Ma NC67; and,
- Siyanda District Municipality:
 - Kai !Garieb.



Map 39: Cadastral Information

2.5.1.2 Demographics

The area is sparsely populated, with dispersed settlements almost entirely concentrated along the banks of the LOR in formal settlements such as Riemvasmaak; Onseepkans; Goodhouse, Witbank; Vioolsdrift, Noordoewer and Sanddrift, with a large informal settlement at Aussenkehr. Other settlements, further from the river include villages such as Steinkopf, Eksteenfontein, Khuboes, and Warmbad. Less than one sixth of the population from Vioolsdrift and Steinkopf through to Pella are found in rural areas.

This area is one of the least populated parts of either country, with the Northern Cape in South Africa, despite being the largest province, only hosting 3% of the country's total population, and local rural densities only being approximately 0.2 people per km². Similar densities exist within Namibia's portion of the study area.

Agricultural activities are also concentrated along the banks of the LOR (except for livestock farming) due to the availability of water, and the warm climatic conditions (PWC, 2005g).

2.5.2 Legal Framework

2.5.2.1 Transfrontier Conservation

Guided by the principles underlying the SADC Protocols on transfrontier conservation and wildlife management, several Transfrontier Parks and TFCAs have been established, including, *inter alia*, the following to which Namibia or South Africa are signatories:

- ARTP;
- Kgalagadi Transfrontier Park;
- Limpopo Shashe Transfrontier Park;
- Great Limpopo Transfrontier Park;
- Kavango Zambezi Transfrontier Conservation Area;
- Iona Skeleton Coast Transfrontier Park;
- Maluti Drakensberg Transfrontier Park; and,
- Lubombo Transfrontier Conservation Area.

Within the ambit of the ARTP, Namibia and South Africa are investigating the possibility of establishing a TFCA, with the focus in both countries falling within the LOR eco-region, encompassing large portions of the Nama and Succulent Karoo Bio-regions, and most of the Nama cultural landscape along the Orange River.

The South African Department of Environmental Affairs and Tourism (DEAT) is the lead agent regarding transfrontier conservation planning and implementation, while the Ministry of Environment and Tourism (MET) in Namibia takes the lead on behalf on the country's government.

Besides the transfrontier conservation initiatives that these two countries are involved in, an additional transboundary management mandate that needs to be addressed is the Ramsar Convention guiding the management of the crossborder wetland at the ORM, a Ramsar site that both countries are signatory to. As a wetland of international significance this wetland requires joint management to ensure that the environmental stresses currently experienced by the site can be mitigated, possibly leading to improvements in the functioning of this wetland.

Numerous opportunities exist to create new or expand the existing transfrontier conservation initiatives to include the Ramsar site, the ARTP, Sperrgebiet, Richterveld WHS, GFRCC, Nababeep and Plot 226 with the Namibian state land, Bushmanland Bio-region with the Sandfontein farm, Oranjevalle, and the Augrabies cluster including the Riemvasmaak area.

2.5.2.2 Water Resource Management

The Orange River is an international watercourse with an obligation for it to be managed and used in terms of the relevant rules of international law, based on the principles as contained in the SADC Protocol on Shared Watercourses, aimed at adopting a holistic approach, with respect to the use, protection and regulation of the shared watercourse.

The SADC Revised Protocol on Shared Watercourses:

- Seeks to foster closer cooperation for the judicious, sustainable and co-ordinated management, protection and utilisation of shared watercourses and advance the SADC agenda on regional integration and poverty alleviation;
- Obliges the watercourse states to utilise a shared watercourse in an equitable and reasonable manner
- Makes specific provisions and arranges for planned measures, environmental protection and preservation, and the prevention and mitigation of harmful conditions;
- Provides guidelines for the establishment of joint management mechanisms;
- Allows watercourse states to enter into agreements on the characteristics and use of a particular watercourse or part thereof; and,
- Recognises the sovereignty of respective countries (PWC, 2005d).

Critical for regulating the use and protection of the LOR would be agreement between the two countries regarding a planned measure to ensure that the use of the river is equitable and reasonable, and leads to environmental protection and preservation, as well as the mitigation of harmful conditions. Regarding joint management structures, it is recommended that the TFCA institutional arrangements that already exist be used in an effort to avoid duplication.

This LORMP can form the basis for closer cooperation between the two sovereign states and lead to the judicious, sustainable and co-ordinated management protection and utilisation of the LOR as a shared watercourse, significantly advancing the SADC agenda on regional integration and poverty alleviation, in an area that has been integrally linked, culturally and ecologically for millennia, yet divided for the past few decades along colonial and political boundaries.

Namibian legislation pertaining to water resource management includes, *inter alia*:

- Water Act, 1956
- Water Resource Management Act, 2004
- Pollution Control Act

No clear guidelines exist regarding measures for controlling the tourism and recreational use of the river, thus it is recommended that the principles contained in the Namibian Policy on Concessions within Protected Areas be used as a guide, possibly linked to the TFCA proposed for the LOR area as a possible transfrontier conservation initiative.

South African legislation pertaining to water resource management includes, *inter alia*:

- NWA; and,
- Small Vessel Safety Regulations.

Similar to Namibia, no specific guidelines exist for controlling the tourism and recreational use of the river and thus it is critical to link the river use with the transfrontier conservation initiatives, specifically the expansion of the ARTP responsibilities to include the potential TFCA stretching from AFNP to the ORM.

Not only will an expanded TFCA significantly contribute to increased protection for the biodiversity of the region, but it will enable effective management of the river as a shared watercourse and the conservation of the cultural heritage of the region, as well as unlocking the economic potential of the region in an equitable and sustainable manner, and providing viable alternative livelihood options for the regions people, despite the constraints posed by the limited amount of water within this harsh environment.

2.5.2.3 Border Demarcation

Despite an international moratorium on moving boundaries, it was decided that clarity must be attained regarding the disputed border between Namibia and South Africa. This initiative culminated with a resurveyed boundary at 1:10 000 scale, consisting of 77 Orthophoto Maps covering the entire border from the Orange River Mouth to the 20th Parallel, the entire southern border of Namibia with South Africa (refer Figure 15).

On 18 December 1995 the Chief Surveyor General of the Republic of South Africa and the Surveyor General of the Republic of Namibia certified that the demarcation of the Orange River Boundary “...have been carried out in accordance with Article 1(3) of the Agreement between the Government of the Republic of Namibia and the Government of the Republic of South Africa regarding the Delimitation and demarcation of the Boundary of the Orange River”.

Through this clarity it was envisaged that border control and immigration issues would be sorted out, as well as aspects pertaining to mining and prospecting, water rights and farming. Since the methodology used determined the middle point of the river course as the border and not the Thalweg, problems are experienced when the river is low, yet the principle of the southern side being South African and the northern side Namibian prevails in controlling the border.

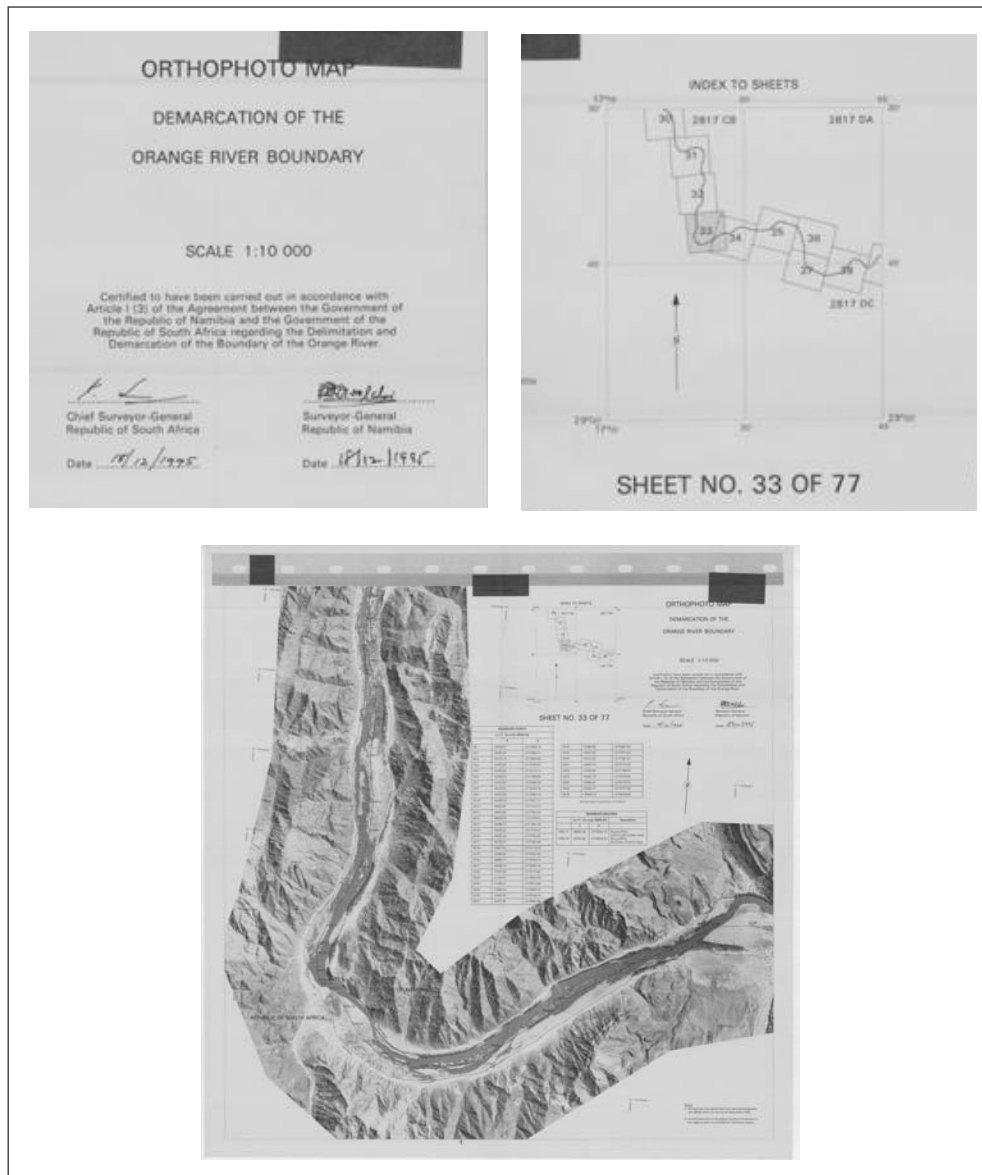


Figure 15: Surveyed Border, 1995

2.5.3 Institutional Arrangements

Present responsibilities in Namibia and South Africa for environmental management of the river are divided between a number of organisations that include the Departments of Environmental Affairs, Water Affairs, Agriculture and Minerals and Energy. Authority and responsibility of these departments have been compounded due to the perceived unclear border situation (PWC, 2005d). Due to differing mandates and guidelines two main institutional arrangements govern the management of these transboundary issues, the first pertains to conservation management, while the second addresses water resource management.

2.5.3.1 Transfrontier Conservation

The ARTP is playing a leading role in the development of transboundary conservation initiatives, with the JMB accepting its responsibility as the institutional structure through which many of the SADC guidelines must be clarified for local conditions. Many of the institutions represented on the ARTP JMB are involved in other transboundary initiatives including water resource management, regional growth and development, wetland management and cultural conservation.

As such the ARTP JMB is becoming a co-ordinating mechanism through which transfrontier aspects beyond the Transfrontier Park are being discussed. If correctly structured this institutional structure could become the mechanism through which the management of the Ramsar site can be co-ordinated, various new transfrontier areas planned and conserved, and the Nama, Baster and other cultural heritage issues be conserved, as well as the objectives of the Twinning Agreement between the Karas Regional Council and the Northern Cape Government be achieved.

According to DTEC, 2008, the management structure of the ORM Transfrontier Ramsar Site (ORMTRS) will consist of two committees:

- a DTEC Management Committee addressing the South African component including a Management Advisory Sub-committee responsible for the ORMNR; and,
- a MET Management Committee in Namibia.

To oversee the cultural heritage conservation of the region, as well as ensure equitable and sustainable participation of the affected communities, the existing traditional leadership structures, both within Namibia and South Africa, can be tasked with this responsibility, that they are already undertaking, on behalf of the ARTP JMB.

2.5.3.2 Water Resource Management

The PWC between Namibia and South Africa was established in the 1980s to attend to mutual interests concerning water matters, and operates at the advisory, policy-making and supervisory level, but does not have capacity or authority to regulate or manage water resource systems. As an institutional structure between the two countries the PWC thus oversees all operational issues on the LOR of a bi-lateral nature. The PWC is obliged to report to the Orange-Senqu River Commission (ORASECOM), a co-ordinating structure between Lesotho, Botswana, South Africa and Namibia, but operates separately from it.

Additional bi-lateral structures that exist to co-ordinate joint water management issues include:

- Joint Irrigation Authority (Vioolsdrift/Noordoewer); and,
- Lower Orange Remediation Forum (PWC, 2005d).

2.5.4 Planning Framework

The LOR planning process is integrally linked to various other planning initiatives, including, *inter alia*:

- The compilation of an ICDP for the Namibian Component of the proposed TFCA in the LOR area;
- The compilation of an ICDP for the South African component of the proposed TFCA in the LOR area;

- The planning of the proposed Orange River Mouth Nature Reserve (ORMNR) and transfrontier Ramsar site; and,
- Development and adoption of a Strategic Action Plan for balancing water uses in the Orange Senqu River Transboundary Basin – an ORASECOM initiative.

Through the ARTP JMB the country specific components regarding the feasibility of establishing a TFCA within the LOR area is being ascertained. These two ICDPs will be aligned with the LORMP.

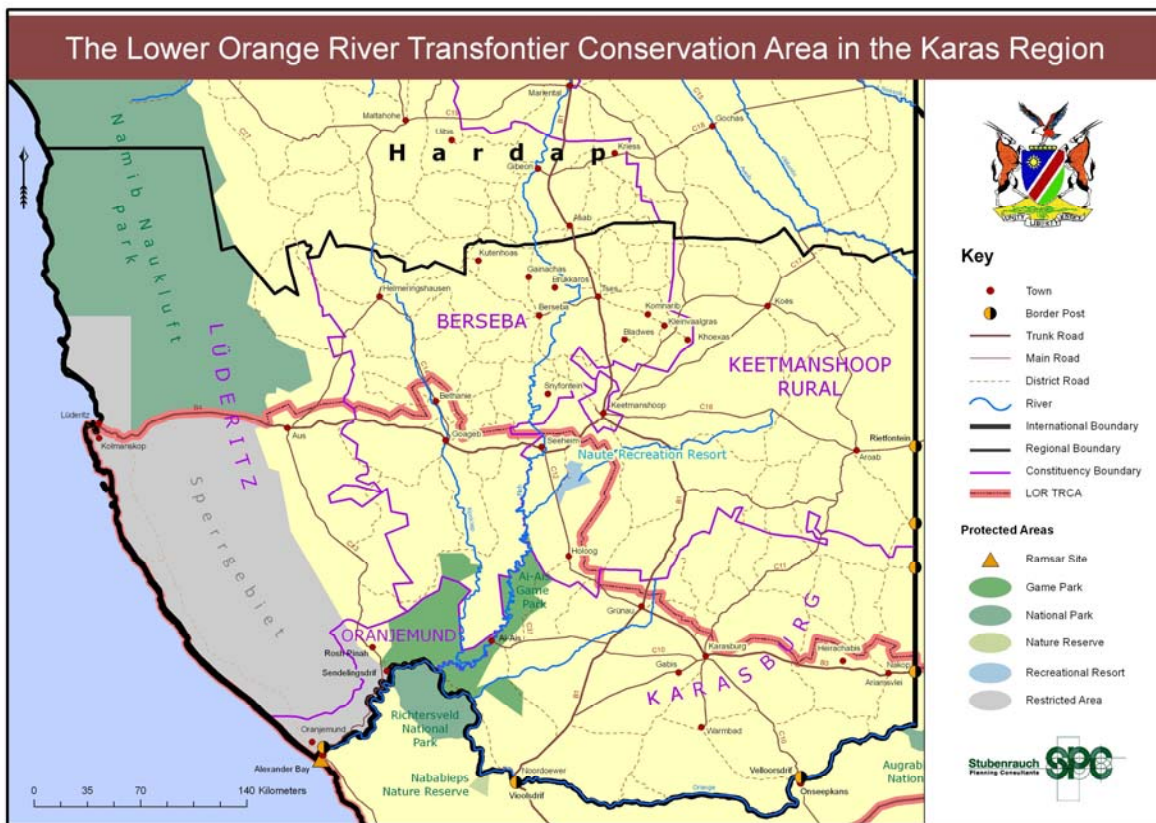
The Namibian study area stretches from Luderitz to Ariamsvlei, and includes the Naute Dam recreational area, the Sperrgebiet, Namibian component of the ARTP, GFRCC, Aus, Warmbad and Gamaseb Community Conservancies, various private conservation initiatives and other land (refer Map 40).

The South African ICDP incorporates three national parks, namely Namaqua, Richtersveld, and AFNP, the Richtersveld WHS, several provincial protected areas, communal and private land (refer Map 41).

Both ICDPs aim to provide insight into the most viable land use options for this area by investigating possible linkages between protected areas, identifying areas requiring conservation, proposing ecological linkages and areas suited to extensive and intensive agriculture.

Joint planning initiatives regarding the ORMNR and the Ramsar site entail the establishment of a transboundary structure to address the water management issues, as well as country specific details in terms of the respective legislation in each country.

Regarding the activities of ORASECOM and the PWC numerous planning and co-ordination initiatives are taking place specifically aimed at discussing the water balance ensuring equitable distribution of water between the affected countries, as well as management interventions aimed at ensuring that the quality of the water meets agreed standards.



Map 40: Scope of Namibian ICDP

"to the cartographer the river seem to divide the land, and to the politician this is certainly so. But to the locals, the !Gariiep [LOR] is a cultural epicenter around which people have always congregated. The river is not only a lifeblood in the desert, but a place which the Nama of both South African and Namibia revere as a thread tying them together, despite its political role as a boundary designed to separate people and nations."

Thornton, M

THE PEOPLE



3 THE PEOPLE

Within this section of the LORMP the following is addressed:

- *Subsection 3.1* identifies the stakeholders who have a role to play in attaining the objectives as envisaged for the area; and,
- *Subsection 3.2* summarises the needs and expectations of the various communities of interest participating in the planning process.

3.1 STAKEHOLDERS AND ROLE PLAYERS

Numerous stakeholders are affected by the LOR generally and specifically when addressing the unlocking of the ecotourism potential of the river as a resource shared by Namibia and South Africa as sovereign states. Within this section these stakeholders will be identified according to the specific community of interest within which they resort (refer Figure 16), and the role that these stakeholders play within the broader strategy aimed at unlocking the ecotourism potential in an equitable and sustainable manner discussed.

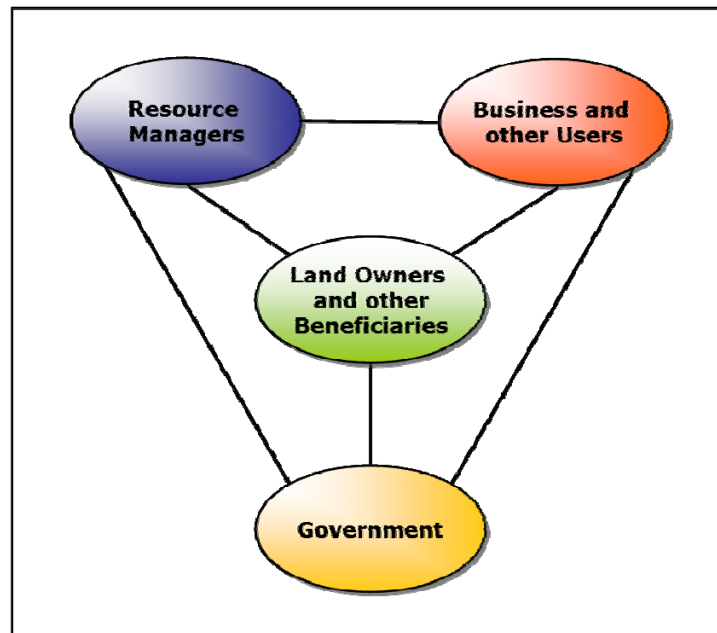


Figure 16: Communities of Interest

3.1.1 Resource managers

The first community of interest is the resource managers formally tasked with the responsibility of managing the natural and cultural resources of the area, and these include public, private and communal role players, including, *inter alia*:

- National Conservation Authorities:
 - MET, Namibia; responsible for Ai-Ais Hot Springs Game Park, and the Sperrgebiet, and,
 - SANParks, South Africa, responsible for the AFNP and the RNP;
- Provincial Conservation Authorities:
 - DTEC, Northern Cape, South Africa; responsible for NNR, and the proposed ORMNR and ORMTRS;

- Communal Conservation Authorities:
 - Richtersveld WHS Management Authority, South Africa;
 - Bondelswarts Community responsible for the Gamaseb and Warmbad Conservancies, Namibia; and,
- Private Conservation Authorities:
 - ANP; Namibia.

Various private and communal landowners between AFNP and the ORM do manage the natural and cultural resources on their properties, yet these properties do not have formal protection area status, and till this status is afforded to them they can not be seen as formal protected area resource managers.

This applies to various private and communal farms in the Riemvasmaak, Onseepkans, Oranjevalle, Pella, and Goodhouse river sections, such as the potential Riemvasmaak Conservancy, the Sandfontein Private Game Reserve, Klein Pella and other.

3.1.2 Landowners

The second community of interest is the landowners on whose land the natural and cultural resources are located. Often the landowners and the resource managers are the same, yet in some cases they do differ, as is the case in the RNP, where the landowners is the Richtersveld Communal Property Association (CPA) and the resource manager is the SANParks, managing the Park under a co-management agreement between the state and the community.

Within this community of interest the following landowners are found, including, *inter alia*:

- State:
 - Namibia:
 - Department of Land Affairs;
 - South Africa:
 - Department of Land Affairs;
 - Department of Public Works;
- Communal:
 - Namibia:
 - Bondelswarts;
 - Bethanie;
 - Aus;
 - Topnaars;
 - Berseba;
 - South Africa:
 - Riemvasmaak Community;
 - Onseepkans;
 - Pella;
 - Witbank;
 - Goodhouse;
 - Richtersveld;
- Private Landowners:
 - Namibia:
 - Aussenkehr;
 - Noordoewer Farmers;
 - Various landowners between Noordoewer and Ariamsvlei;
 - South Africa:
 - Blouputs farmers;
 - Byna Bo Farms;
 - Nous Wes Boerevereniging Farmers; and,
 - Klein Pella.

3.1.3 River Industry

The third community of interest is the formalised river industry who utilises the river commercially or recreationally, and includes, *inter alia*:

- APA Members including but not limited to:
 - Kalahari Outventures;
 - Gravity Adventures;
 - Wildthing Adventures;
 - Bundi;
 - River Rafters;
 - Felix Unite; and
 - Amanzi.

- SANParks:
 - Augrabies 3-in-1 Adventure; and,
 - Sendelingsdrift Camp.

Several commercial companies offer accommodation options for the river industry to utilise, including lodges, camps and campsites, and these include Norotsama Lodge at Aussenkehr, Felix Unite, Wildthing, Amanzi, Aquacade, etc. at Noordoewer/Vioolsdrift, the SANParks facilities at Sendelingsdrift and Augrabies Falls. Many of these facilities would not be viable if the river was not the attraction and thus these facilities can be regarded as river operations, albeit indirectly.

3.1.4 Government

The fourth community of interest is the Government role players at different spheres, responsible for providing the framework within which the other three communities of interest must operate. This clarified operational environment enables the relationships between the various role players to be established and controlled ensuring equitable participation by all affected stakeholders. The role players within this community of interest includes, *inter alia*:

- National Government:
 - Namibia:
 - MET;
 - Ministry of Water Affairs;
 - Ministry of Agriculture;
 - Ministry of Arts and Culture;
 - Ministry of Mining;
 - Ministry of Fishing;
 - South Africa:
 - DEAT;
 - DWAF;
 - Department of Land Affairs;
 - Department of Science and Technology;
 - Department of Agriculture;
 - Department of Minerals and Energy;
 - Department of Foreign Affairs;
 - Department of Home Affairs;
 - Department of Safety and Security;
 - National Treasury;

- Regional or Provincial Government:
 - Namibia:
 - Karas Regional Council;
 - South Africa:
 - Northern Cape Provincial Government;

- Local Government:
 - Namibia:
 - Constituencies;
 - Land Boards;
 - South Africa:
 - District Municipalities – Siyanda and Namaqua; and,
 - Local Municipalities – Richtersveld, Khai Ma; (Upington, Poffadder, Springbok).

3.2 NEEDS AND EXPECTATIONS

During interactions, both collectively and individually, the following needs and expectations became apparent, and form part of the various inputs required for the planning component of this LORMP.

3.2.1 Resource Management Community

Critical to successful resource management is clarity regarding the importance of specific resources, albeit vegetation, water or culture. Within South Africa, the resources on communal land between Onseepkans and the Richtersveld were shown to be under-protected necessitating additional efforts from resource management authorities to achieve national targets. In this regard the DTEC must work closely with the Department of Land Affairs to ensure that wherever possible, critical land is not disposed of for possible inclusion in the national conservation estate of the country.

This clarity also allows for specific discussions between resource management authorities and landowners to take place so as to secure conservation worthy areas without necessitating land to be expropriated.

Additionally, resource management inputs regarding the riparian habitat integrity were also addressed through this planning process providing insight into the management of the river and the associated aquatic ecosystem.

3.2.2 Land Owners and Users

Throughout the participatory planning process the historical rights of communities as owners and users of land and associated resources became apparent. Within South Africa this need and expectation is formally addressed through the land restitution and water management programmes aimed at redressing past imbalances due to gender and racial discrimination, while in Namibia this aspect is being addressed in a similar way, targeting specific communities for land reform programmes as well as within the concession policies of the country.

Critical to the success of these programmes is the provision of alternative livelihoods for the landowners, aimed at diversifying the options available to them, and broadening the investment, operational and partnership options on offer.

Private landowners, both in Namibia and South Africa have requested clarity and commitment from the respective Governments to recognise their rights as landowners, and to negotiate conservation management opportunities in good faith, recognising the role that the private sector can play in conservation initiatives. This specific need has been raised in the discussions between the MET and the GFRCC, at Sandfontein, Riemvasmaak, Augrabies, Pella and in the Richtersveld.

As recently restituted landowners, many of the communities have requested direct assistance in land use planning, aimed at achieving sustainable and equitable benefits from their land. Many of the land use options are complex and differ tremendously from traditional communal use of landscapes and resources, necessitating a certain degree of training and capacitation, as well as financial planning and modelling to enable the communal landowners' active participation in business ventures without exposing the communities to unnecessary risks.

Clarity regarding the relationship of communal landowners with the state was raised in most discussions, necessitating specific aspects to be addressed to ensure that the communities' collective rights to resources do not erode entrepreneurship and individual economic opportunities, to the detriment of both the community and individuals within communities.

3.2.3 River Industry (Business Community)

During numerous interactions with the river industry operators who utilise the LOR as part of their suite of adventure options, the request was continuously made to address and clarify the operational environment within which they operate. Currently, this environment is unclear, with the industry experiencing seasonal fluctuations, with excessively high peaks and total slumps in occupancy levels.

Additionally, the operators are concerned about the safety of guests due to a lack of enforcement regarding the safety standards and operational procedures. Since the Africa Paddling Association is a voluntary organisation and membership is not compulsory, it is difficult to enforce industry norms and standards. As a possible solution, a partnership between the APA and the TFCA management could solve this through an agreement regarding the industry norm and standard for the LOR enforced through concession compliance. In this way the industry can be regulated through concessions managed by the overarching TFCA management structure. Since only concessionaires will be utilising specific portions of the river, industry self-regulation, rather than policing becomes important, due to breaches in safety and operational procedures resulting in a possible termination of the concession.

Further clarity regarding carrying capacities, campsites, environmental norms and standards etc is also a need that the river industry expects to be addressed. Currently the campsites are largely on a first come first served basis, creating extremely difficult operational conditions during peak periods. It is expected that by limiting the maximum number of people and boats within a specific stretch of the Lower Orange River the occupancy levels will be increased, by spreading the usage over longer periods of time.

Not only does this make many of the camps and river operations more viable, but also addresses the need for employment security for local beneficiaries, since the current trend is to import all staff rather than employ local people.

This approach will enable the industry to develop training programmes for local staff, knowing that they will be utilised throughout the year and not just during peak periods. This certainty will encourage the active involvement and commitment of local communities to the river industry, thereby reducing the risks of the industry.

Opportunities can also be established where the industry can transfer financial risks to local community structures while retaining operational risks. These partnerships will enable communities and river operators to form mutually beneficial relationships, based on sound business principles.

The possibility of a collective insurance programme for all guests was also raised as a need, where the industry stressed the difficulty of accessing affordable insurance cover as individual operators yet felt that a collective approach, possibly within a TFCA would enable more efficient access to this industry requirement.

3.2.4 Government

As the pivot on which the relationship between the resource managers, land owners and river industry will need to be balanced, Government, within both Namibia and South Africa, will need to plan their specific interventions, within and between the countries, based on the guidelines provided by the SADC Protocols.

Through the TFCA agreement and structure that exists between the two countries, strategies, programmes and plans can be developed guided by this management plan for the LOR, to address the specific issues that are deemed important by the other communities of interest aimed at unlocking the ecotourism potential of the river.

To do this the Governments in the two countries need to know that the actions that they embark upon truly address the needs and expectations of the affected stakeholders and role players, and that the initiatives of Government serve the public effectively and efficiently, based on identified local needs, providing Government with a mandate to operate.

"Driftwood and drama flow down the Orange River to the very end."

Lawrence G Green

THE PLAN



4 THE PLAN

Within this section of the LORMP the following is addressed:

- *Subsection 3.1* addresses the overall and specific management objectives as envisaged for the area;
- *Subsection 3.2* provides insight into the process used to compile the Concept Master Plan, addressing aspects such as the current environmental character, based on the existing audio-visual intrusions, and the impact that the planning parameters will have on this character, culminating in a future desired state;
- *Subsection 3.3* provides details for each river section addressing the Integrated Concept Proposals, the environmental sensitivities affecting the concept, and Concept Development Plans and details for each of the 12 river sections;
- *Subsection 3.4* proposes an Operational Framework based on process based management system principles, for addressing the action projects identified during this planning process and the detailed planning of each river section; and,
- *Subsection 4.5* proposes an institutional model for managing the relationship between the various role players and stakeholders affected by the LORMP.

4.1 MANAGEMENT OBJECTIVES

4.1.1 Overall Objective

The overall objective with the LORMP is to unlock the ecotourism potential of the river in a sustainable and equitable manner.

4.1.2 Specific Objectives

The specific objectives with the LORMP are:

- Creating an environment in which the impact of decisions on the biodiversity of the region, as well as its natural and cultural resources can be measured, and decision-makers held accountable;
- Creating a conducive investment and operational environment attractive to ecotourism companies;
- Ensuring equitable benefits flow to the respective communities of interest; and,
- Creating a transparent environment that promotes the formation of Community Public Private Partnerships (CPPP), leads to accountable decision-making, and active community participation in the field of ecotourism development and operation.

4.2 CONCEPT MASTER PLAN

4.2.1 Planning Process

The planning framework for the LORMP is based on the framework designed by Bewsher and Van Riet (2008) which guided the Integrated Development Planning for the Zambian Component of the Kavango Zambezi TFCA. The planning framework is designed to ascertain the current environmental character of the study area by analyzing the audio and visual impacts, and then apportioning attributes to the area based on the character. After addressing aspects such as access, use, development and infrastructure, and assessing the impact of the recommendations against the environmental character it is possible to take informed decisions regarding the Concept Development Master Plan, which will allow a future desired state to be achieved.

The objective of the planning framework is to allow for informed decisions to be made without being subjectively influenced regarding any specific developmental agendas or objectives. By remaining objective it is possible to remain accountable throughout the process. (Refer Figure 17.)

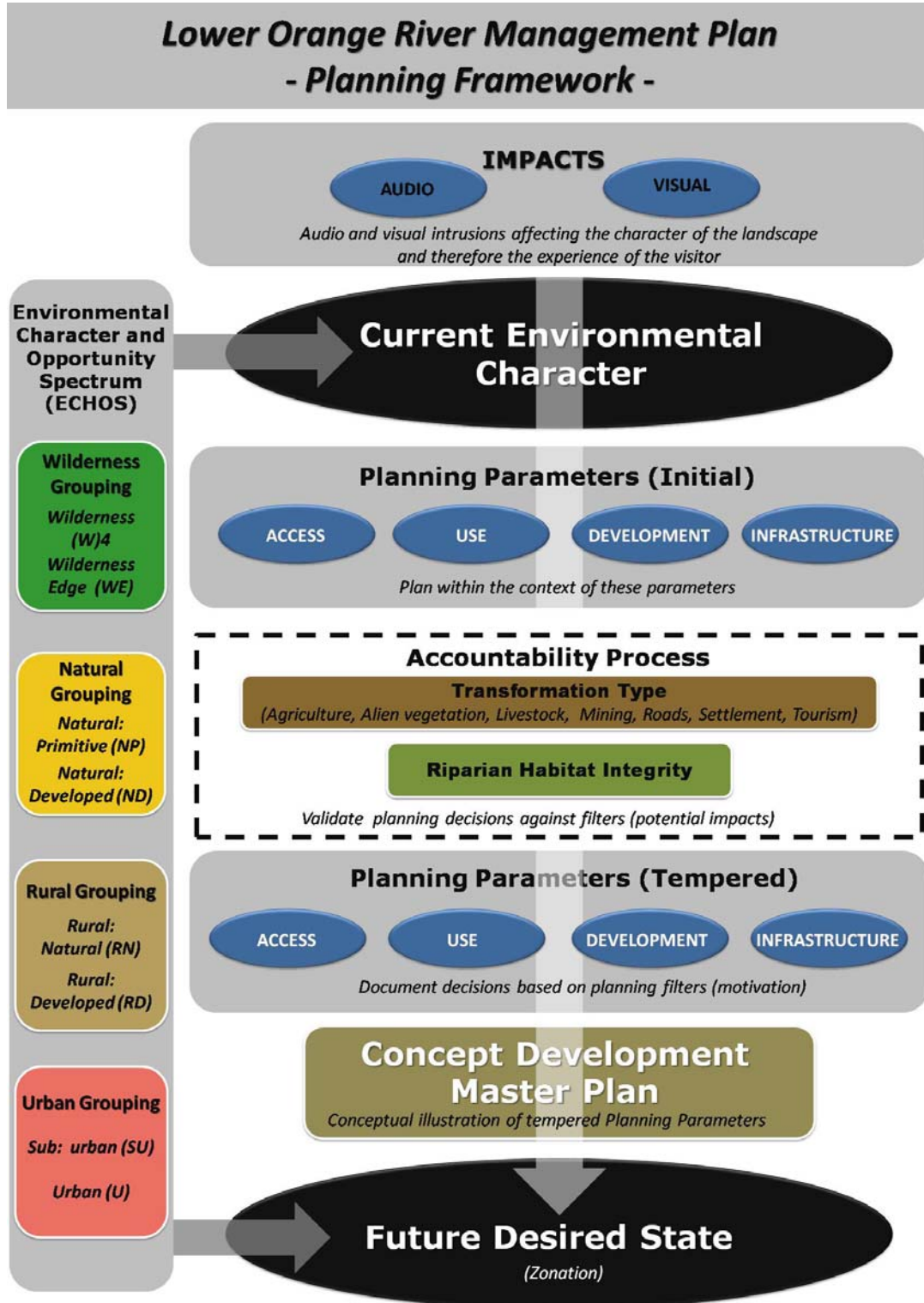


Figure 17: Planning Process

4.2.2 Current Environmental Character

The environmental characteristics of a place influence the experience that guests have of that specific place in that the character creates the sense of place. Along the LOR this character is influenced by settlements, agriculture – both irrigation and stock farming; mining; and areas set aside due to their beautiful landscapes, such as Augrabies, or protected because of their unique natural and cultural assets. This character changes over time due to changes in land use practices, values and infrastructural changes.

By ascertaining the Current Environmental Character (CEC) of a place it is possible to evaluate the impact of decisions on this character. If an objective of stakeholders is to maintain the current state, or even improve the character, then decisions that detract from retaining the current character, or that do not contribute to an improvement, can be informed. Wilderness areas, or areas with pristine habitat, devoid of human intrusions, both visually and audibly, are becoming extremely scarce, and along the LOR, an area perceived as being wild and pristine, these areas are isolated and rare. Only a small portion of the river still retains this character, and it is imperative that these areas are formally protected.

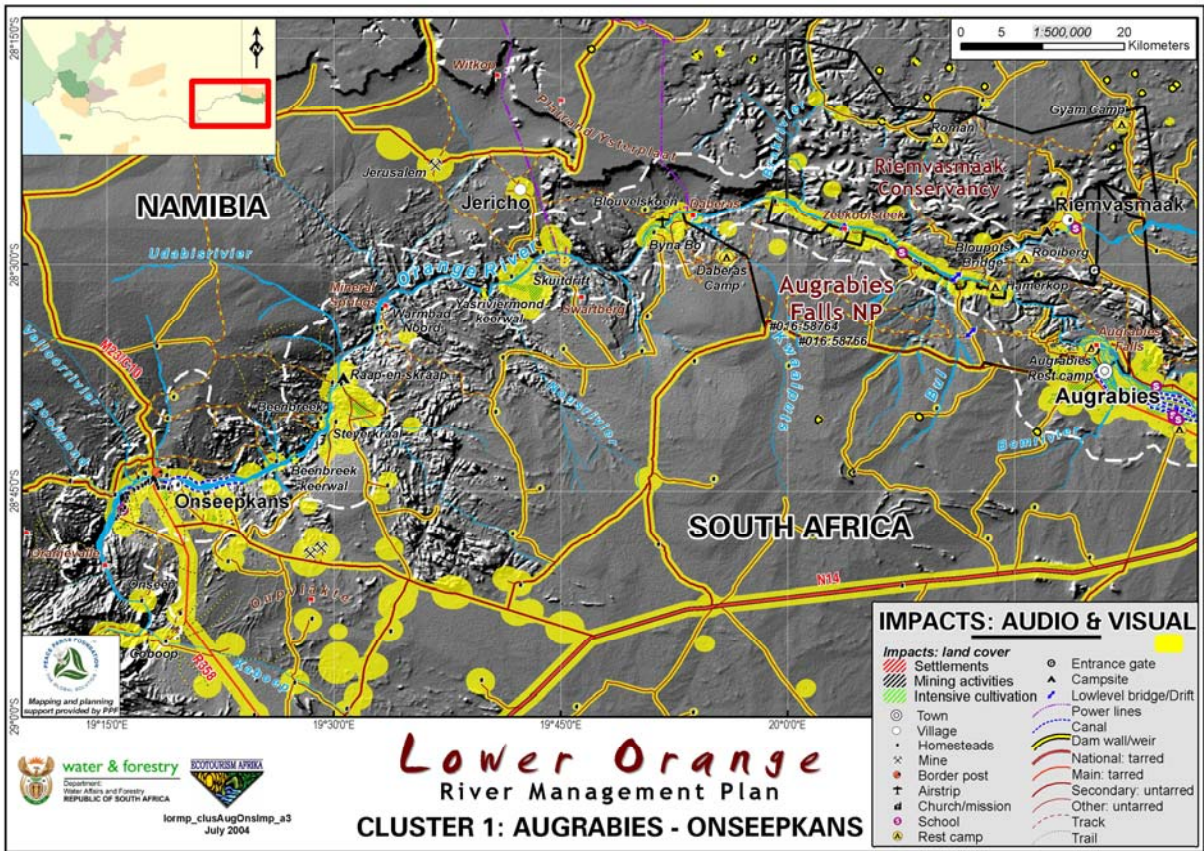
Within the Augrabies – Onseepkans Cluster (refer Maps 42 and 43) the main audio-visual intrusions along the river occur close to the Augrabies Falls National Park, at the Blouputs farms and the scattered agricultural developments along the river, and at Onseepkans. Due to the unproclaimed status of most of the land outside the national park, the environmental character for this cluster is mostly rural undeveloped with a few areas that are rural developed in character. Within the protected area the character is natural undeveloped with a few small areas being natural developed around the camps and related infrastructure.

The second cluster, Onseepkans – Noordoewer (refer Maps 44 and 45), has numerous small audio-visual impacts typically scattered across the entire area in a regular pattern, resulting in the environmental character mostly being rural undeveloped with a few portions classified as rural developed. No area within the shared resource area is has a natural, developed or undeveloped, character due to the lack of formal proclamation status.

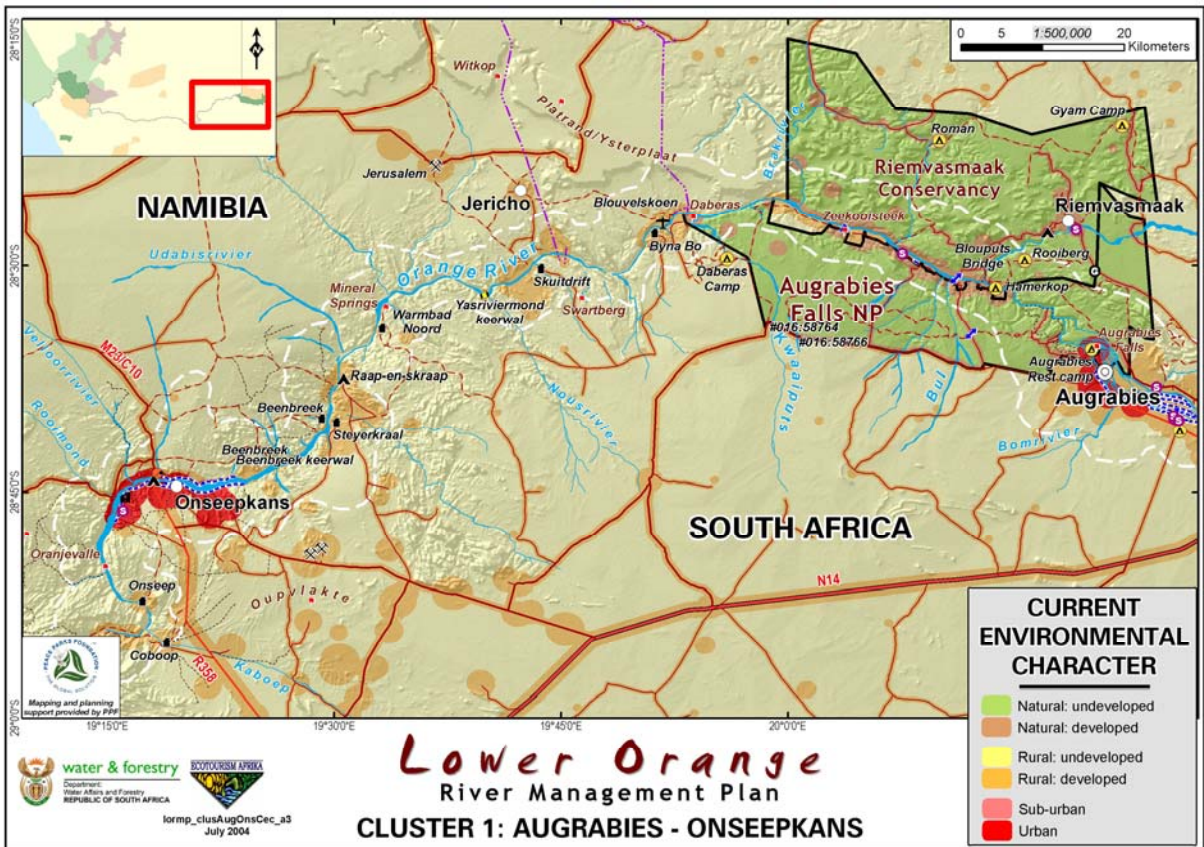
Within the third cluster, Noordoewer – Oranjemund (refer Maps 46 and 47), large areas have a natural undeveloped character, with small areas natural developed in character. Due to the presence of formal proclamation status for the NNR, the RNP, the Richtersveld WHS, the Ai-Ais Hot Springs Game Park, the Sperrgebiet and the ANP this character can be afforded to these areas.

Despite this status, certain areas such as the Aussenkehr and Nooroewer/Vioolsdrift farming areas and the Sendelingsdrift, Sanddrift, Alexander Bay and Oranjemund areas, are urban and suburban in character, with certain portions being rural developed or undeveloped.

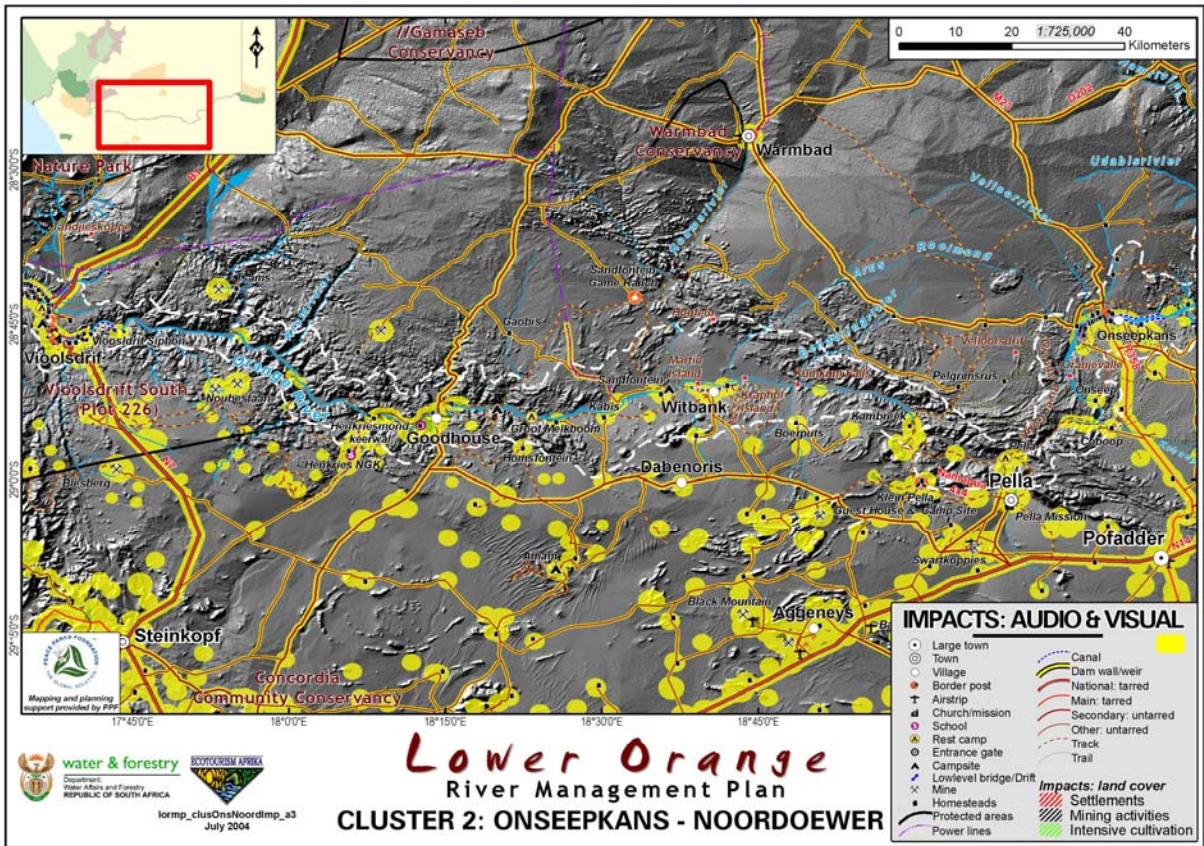
The environmental character that has been apportioned to these clusters will be used as planning input throughout the detailed planning for each river section. The objective is to enhance, or at least not detract from the existing character, and where necessary or appropriate seek formal proclamation status for areas that have the potential to achieve a status that reflects the inherent character of the area. An example will be the area between Henkries and Vioolsdrift where the state land could be proclaimed as a protected area, either side of the river, providing recognition for the undeveloped areas worthy of conservation.



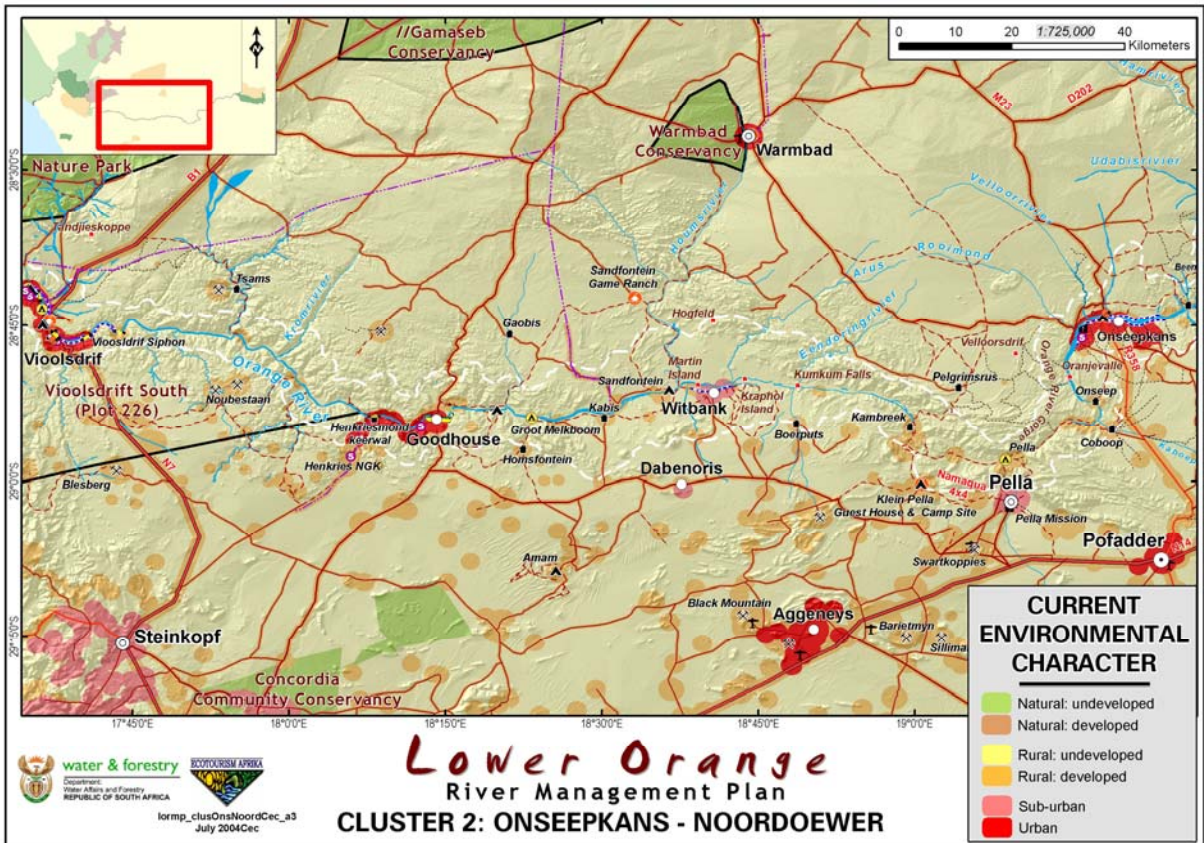
Map 42: Audio-visual Impacts – Cluster 1, Augrabies to Onseepkans



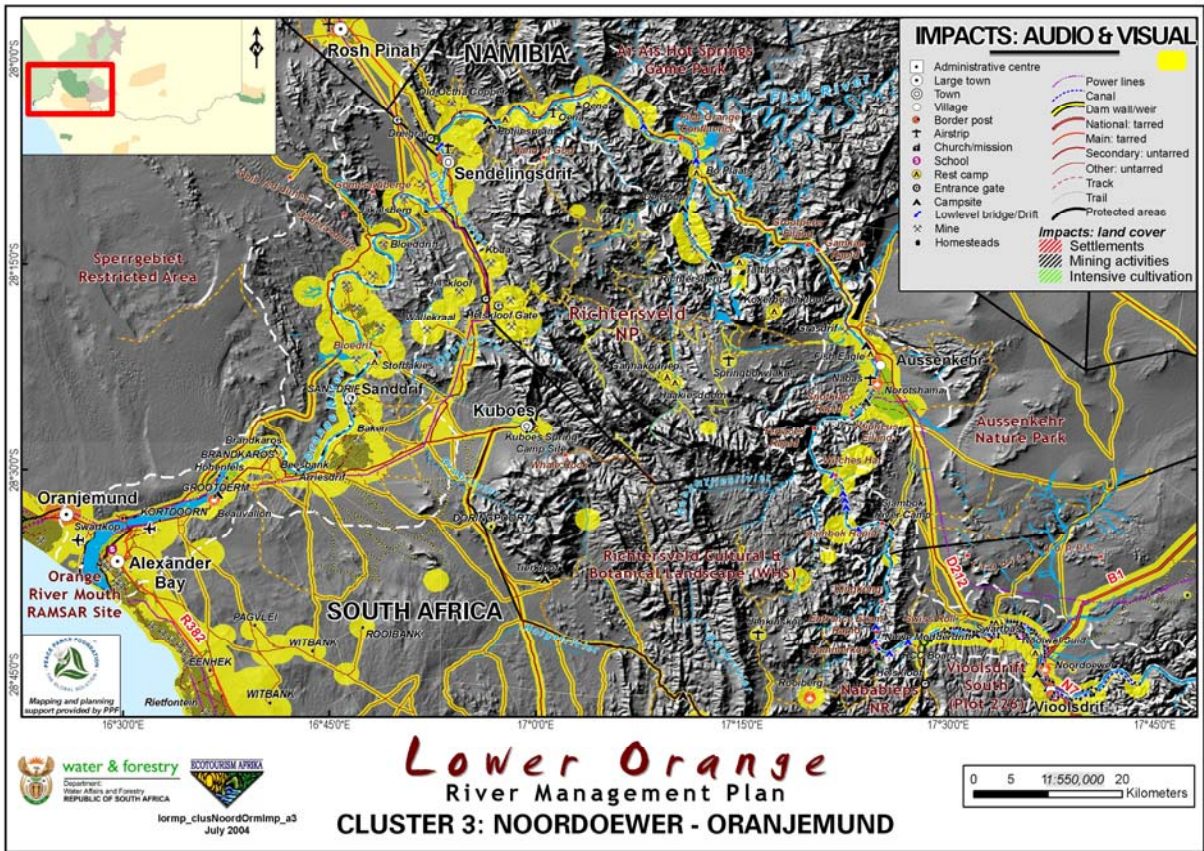
Map 43: CEC – Cluster 1, Augrabies to Onseepkans



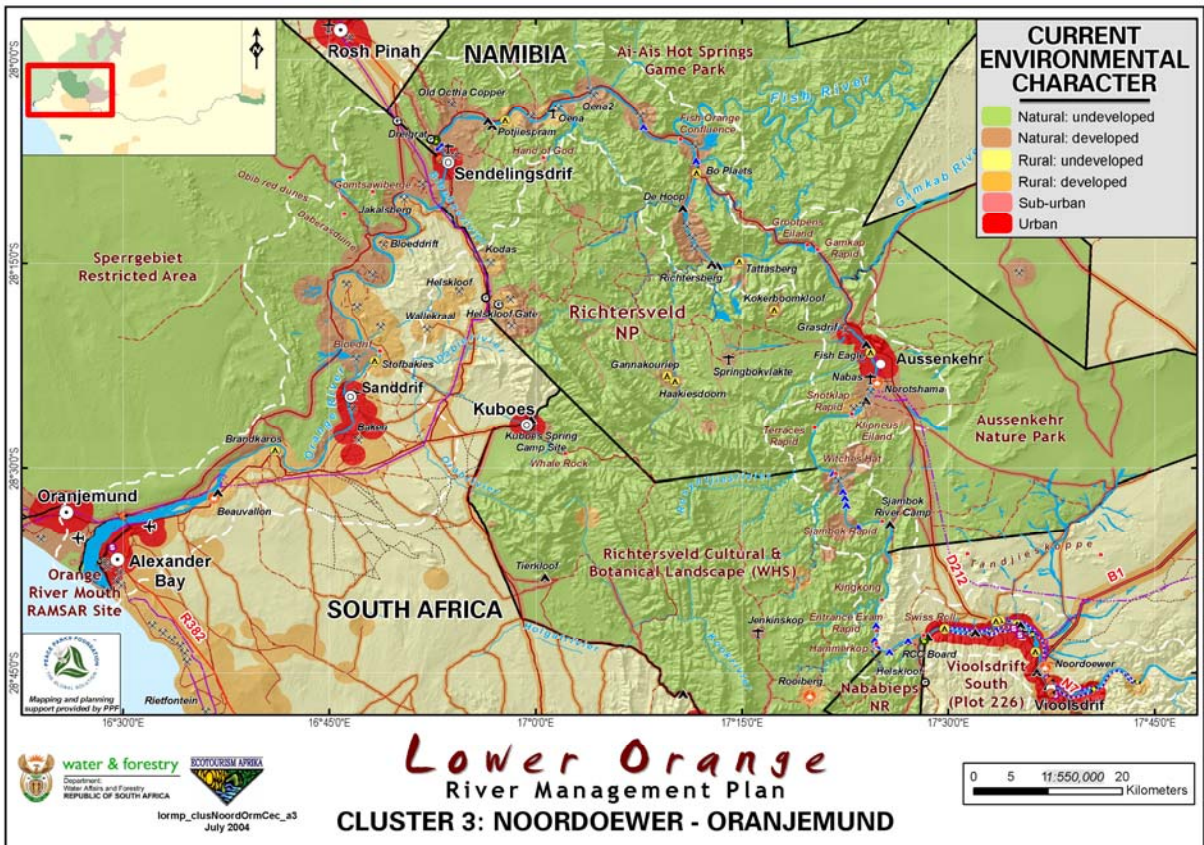
Map 44: Audio-visual Impacts – Cluster 2, Onseepkans to Noordoever



Map 45: CEC – Cluster 2, Onseepkans to Noordoever



Map 46: Audio-visual Impacts – Cluster 3, Noordoewer to Oranjemund



Map 47: CEC – Cluster 3, Noordoewer to Oranjemund

4.2.3 Future Desired State

Throughout the fine scale planning for each river section the impact of access controls such as trailheads, as well as adventure hubs, concessions areas, development nodes and requisite infrastructure are assessed against the CEC and the relevant contribution that these developmental decisions will have on the future desired state for the area.

This Future Desired State (refer Map 48) will be a guide for the management of the area, and serve as a zonation plan that can be incorporated into other planning initiatives such as the Land Use Management Systems within the local municipalities, and the zonation plans for the protected areas.

<Add Map once the river section proposals have been accepted.>

Map 48: Future Desired State

4.3 CONCEPT MASTER PLAN: DETAILED RIVER SECTION DESCRIPTIONS

To allow for effective fine scale planning the LORMP has, after consultation with the affected stakeholders and role players, specifically resource managers, landowners and communities, as well as white water rafting, canoeing, and kayaking operators, been divided into 12 detailed river sections (refer Map 49), namely:

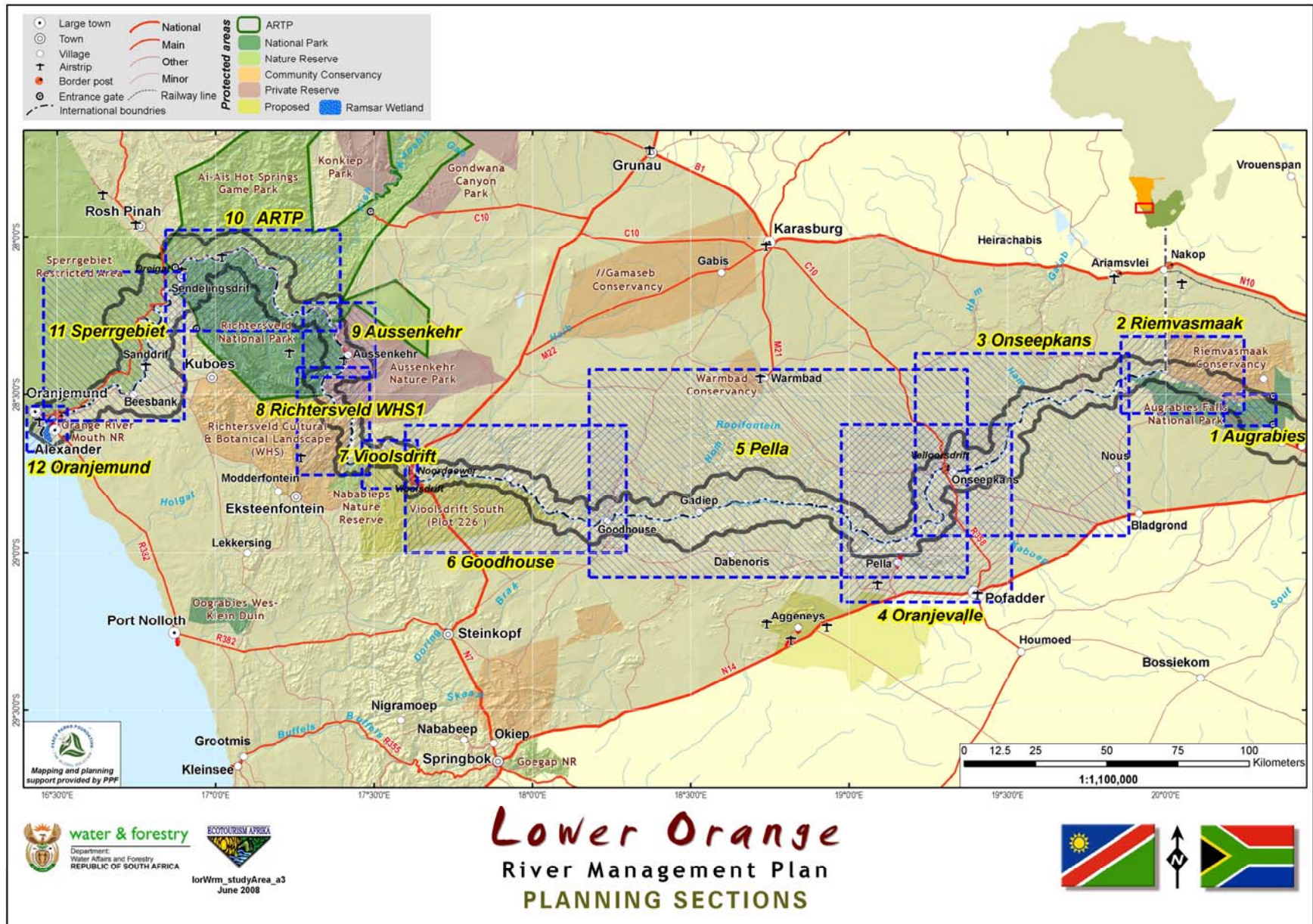
- **Augrabies Falls National Park:** effectively incorporating the entire Augrabies Gorge,
- **Riemvasmaak:** incorporating the common boundary along the river of the Augrabies Falls National Park and the Riemvasmaak community land, as well as the Blouputs Farms;
- **Onseepkans:** incorporating the private farms between the Augrabies Falls National Park and Onseepkans;
- **Oranjevalle:** incorporating the communal and private land either side of the Oranjevalle;
- **Pella:** incorporating communal land from Pella to Goodhouse on the South African side and the Sandfontein farms on the Namibian side;
- **Goodhouse:** incorporating the communal, private and state land from Goodhouse to Noordoewer/Vioolsdrift;
- **Vioolsdrift:** incorporating the various irrigation farms on either side of the river, upstream of the Nababeep Nature Reserve boundary;
- **Richtersveld:** incorporating the Richtersveld World Heritage Site, a portion of the Richtersveld National Park, Aussenkehr Nature Park and a small portion of the Noordoewer farms;
- **Auusenkehr:** incorporating the irrigation farms in Namibia and a small portion of the Richtersveld National Park;
- **ARTP:** incorporating the core section of the ARTP between Gamkab and Sendelingsdrift,
- **Sperrgebiet:** incorporating the area between Sendelingsdrift and the Orange River Mouth; and,
- **Oranjemund:** incorporating the Orange River Mouth Ramsar Site.

Each of these sections can operate as a single management unit, possibly as a concession area, similar to the block concessions used within other TFCAs and protected areas. This will allow for responsibility to be allocated to individual operators, benefits to be managed equitably, and resource management to be handled within specific formally proclaimed protected areas.

Some of the management units are divided such as the RNP, where portions fall within three river sections despite being one management unit. However it is believed that this would be necessary given the functional river sections within which the specific area falls.

The aspect of private individuals and groups utilising the river specifically requires attention. When groups or individuals wish to utilise a specific section or sections of the river authorisation regarding access will be required from the specific concessionaire responsible, for that section of the river, since their access would affect the operational aspects and safety of users along that section of the river. All the concessionaires will be allocated the responsibility for maintaining river registers pertaining to access. Non-compliance with the access protocols and records would be deemed awful access and subject to prosecution.

Until the concessions are allocated as part of the planned measures required to unlock the ecotourism potential of the LOR, common law prevails necessitating lawful access, permission from landowners regarding access and overnight camping and compliance with the sovereign rights of the countries pertaining to border control and immigration measures.



Map 49: River Planning Sections

4.3.1 River Section 1 (Augrabies)

4.3.1.1 Integrated Concept Proposal

Situated entirely within the AFNP, this river section offers exceptional scenery and the opportunity to develop a world class river product based on the product currently offered by SANParks, yet adapted to ensure the legality of the operation and an improvement in both the product and experience.

It is recommended that the adventure product be repackaged to allow for high adventure based on access to a longer stretch of the river within the gorge, that the experience be guided by well trained and accredited practitioners, and that the product be packaged as a concession. Undertaken in this way the option of a single or 2 day experience can be offered, where the single day package includes a walk into the gorge, possibly linked to an abseil, followed by a kayaking or rafting trip along the entire length of the gorge. Guests opting for an overnight experience would complete most of the single day trip, yet stopping at a wilderness style stop-over close to the boundary on the northern side of the river. The second day would entail an easy paddle out of the gorge to the pick up point. (Refer Figure 18.)

This style of product requires minimum infrastructure negating the necessity for permanent infrastructure to be placed in the gorge (such as the boathouse currently utilised), yet does require qualified, well trained, and competent guides, good equipment, and a well designed product which encompasses both a sense of adventure, as well as a good interpretation of natural and cultural heritage resources within the AFNP.

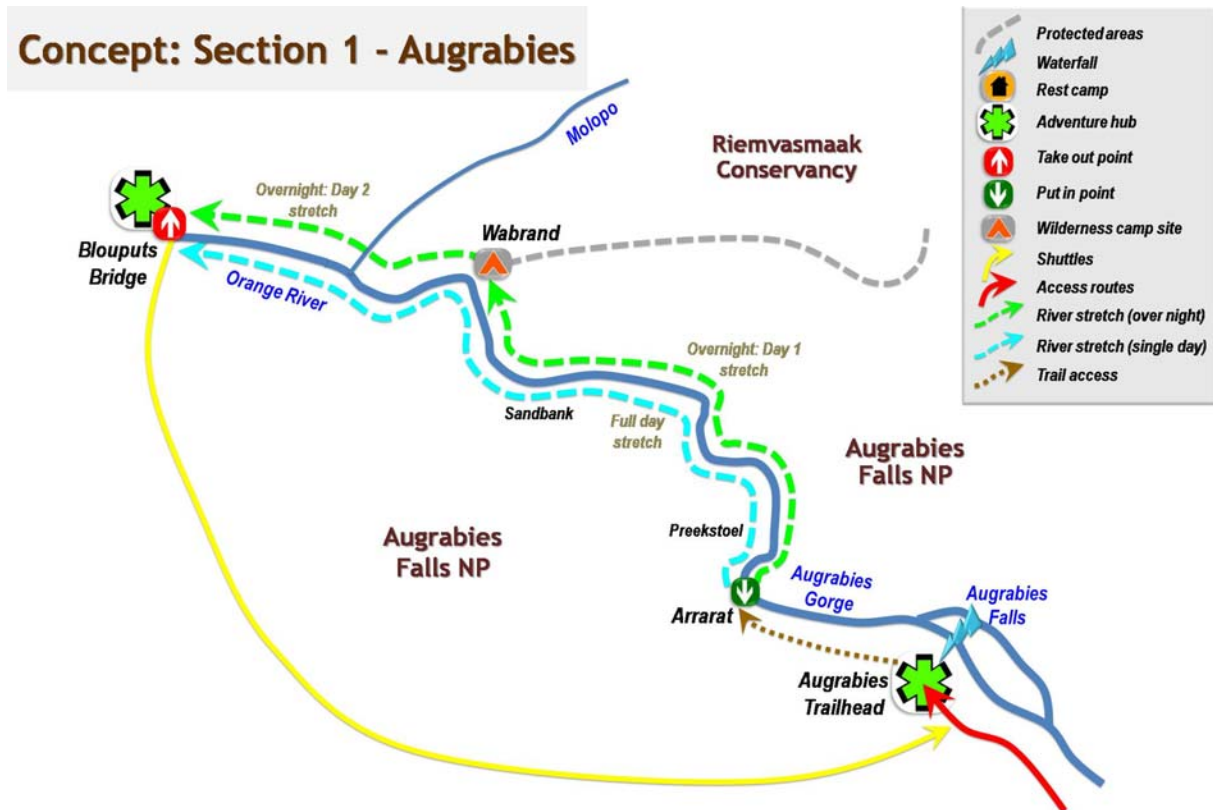


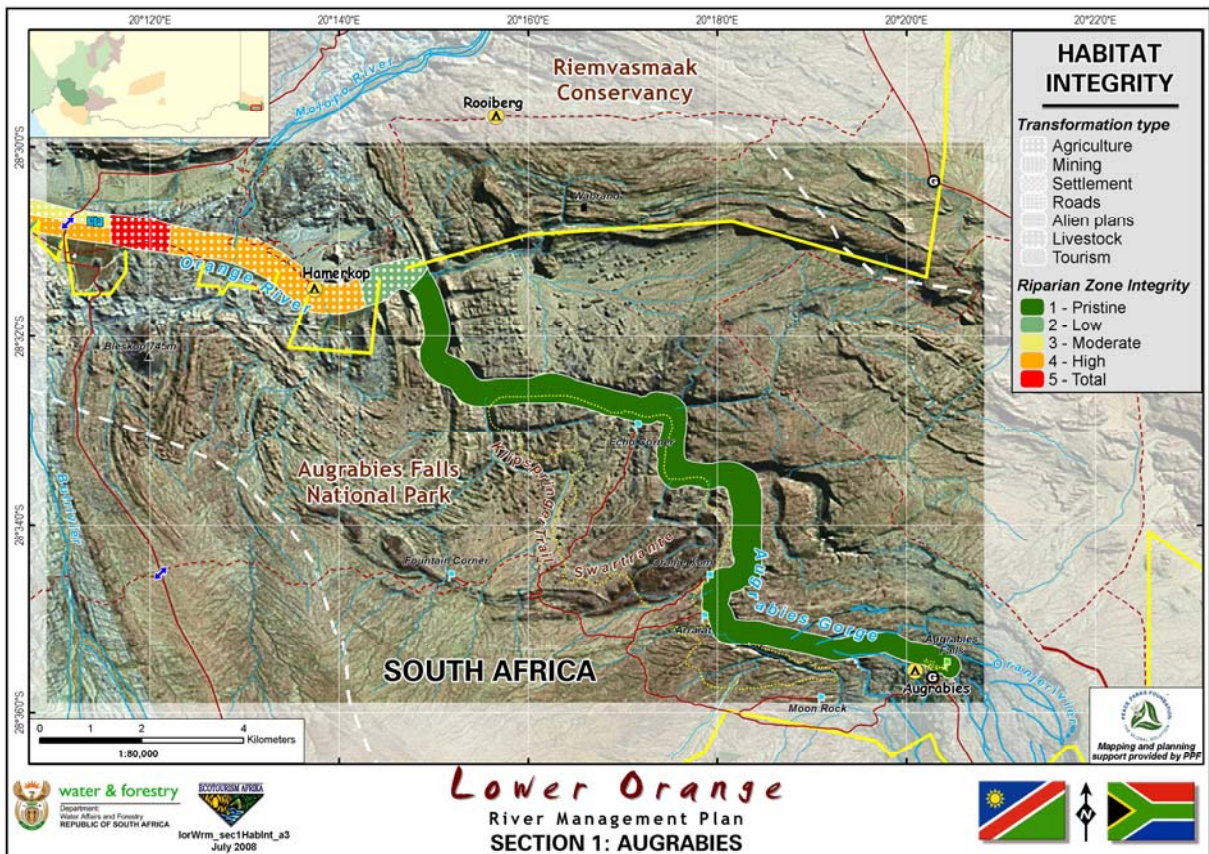
Figure 18: Integrated Concept Proposal, Section 1 (Augrabies)

4.3.1.2 Sensitivities

The pristine nature of the Augrabies Gorge is the single largest influencing factor along the upper reaches of this river section, limiting the use of permanent infrastructure. To further enhance this characteristic it is recommended that the boathouse and equipment store, as well as the motorised boat currently used in the gorge be removed. The transition from pristine to high and even total impacts does change the quality of the experience, yet this transition can be managed as part of the river experience, by providing insight into the value of the alluvial terraces to agriculture in the region, and the value of pristine areas for wilderness experiences. Beside the impact of irrigation farming, the impacted area also has influences from stock farming, specifically from goats and sheep within the Riemvasmaak area. Interpreting these impacts, both from a cultural as well as from a human settlement perspective will be necessary to correctly portray these impacts. Guides should be sensitive to these issues, and be trained to correctly interpret these impacts, due to the huge contrast between the experience in the Augrabies Gorge and that of the area needed to exit the gorge.

The environmental character of the area proposed to serve as overnight stop varies between pristine and low impacts, thus necessitating the provision of wilderness style camping, based on the principle of “pack it in, pack it out”. This will allow for ecotourists to experience the tranquillity of the gorge, yet the positioning of the overnight stop should be peripheral to the sensitive area, the pristine river section, thus not negatively impacting on the integrity of the section, while still providing a high value experience, not influenced by agriculture, settlements or livestock.

An additional sensitivity that should be addressed is the need for the Riemvasmaak Community to be actively involved in, and participate in, tourism development within this and the following river section. Undertaken in this way, this community could provide the trailhead which serves as exit, and become an equitable development partner to SANParks. This should contribute to the development of a conducive relationship being established between the State and the Riemvasmaak Community. (Refer Map 50.)



Map 50: Habitat Integrity, Section 1 (Augrabies)

4.3.1.3 *Concept Development Plan (CDP)*

Even though this river section is relatively short, only 18km, due to the ruggedness of the terrain, and the unique beauty of the gorge, this is deemed ample for either a single day high adventure, or a two day overnight river experience.

To facilitate this it is recommended that the AFNP Rest Camp be used as an Adventure Hub (refer Maps 51 and 52) due to the availability of infrastructure. This Hub could also serve as an Information Centre for the entire TFCA proposed for the region. This would be the eastern access to the TFCA. At this Hub, the concessionaire or river operator can brief guests regarding the experience, safety, natural and cultural resources of significance, effectively, psychologically preparing guests for a high adventure experience in a beautiful and remote environment, worthy of its national park status.

Following the briefing, guests will embark on a 4km hike into the Augrabies Gorge, utilising the existing Klipspringer Hiking Trail, a product that is compatible with the river trail. Depending on the experience levels of the group, a portion of this hike could include an abseil of varying lengths into the chasm of the gorge. This will add significantly to the value of the experience, without detracting from the environmental value of the site.

After reaching the river, guests will be able to transfer either to rafts or kayaks, and depending on the flow level of the river, explore the 18km of canyon and the various rapids, stopping at suitable sites for refreshment. Since this river section is aimed at providing access to a remote and pristine portion of the river, the concessionaire will be responsible for removing all packaging and waste.

Additionally, to improve the aesthetic value and pristine nature of the gorge, it will be necessary to remove the existing infrastructure in the gorge, consisting of a boathouse, storage facility, and power boat. Since the put-in and take-out points are 18km apart within an inaccessible gorge, there will be no need for this infrastructure, yet the concessionaire will need to portage the vessels into the gorge, and transport both guests and vessels back to Augrabies after completion of the experience. The operations on the Zambezi, at Victoria Falls have proven that this can be done sustainably and effectively, and even though it is difficult, it does create additional employment opportunities.

The Wabrand overnight stop has been selected since it is both peripheral to pristine portion of the gorge, and on the edge of the protected area. The site can be service by boat from the put-in point at Hamerkop on the next section of the river experiences, or utilised as a wilderness style camp where everything is brought in and taken out, leaving nothing but footprints.

From the Wabrand overnight stop (refer Maps 51 and 53) guests will have a short paddle of 6.7km to the take-out at Blouputs bridge (refer Map 54) before returning to the Augrabies Falls Hub by late morning. This will leave overnight guests sufficient time to continue with their journeys during the afternoon.

Due to the technical and dangerous nature of this river section and the necessity for qualified and well trained guides it is recommended that this be packaged and promoted as a concession in terms of the Public Private Partnership (PPP) Toolkit for Tourism, the South African National Treasury's Guideline for this type of product in a protected area. Based on the sensitivity analysis regarding the relationship between SANParks and the Riemvasmaak Community, it is further recommended that this PPP become a Community Public Private Partnership (CPPP), discussed along the lines of the Namibian Concession Policy, an excellent tool for ensuring equitable communal access to high value tourism resources.

Since not all the land is within the National Park, it is critical that an agreement regarding revenue sharing be completed between the State, the Riemvasmaak Community, and the relevant Blouputs farmers/landowners. This will enable a degree of control over the riparian vegetation and the impacts emanating from these properties.

When river levels are high, or linked to planned water releases, this section could be utilised for world class white water rafting competitions, and these could be used to ensure that the entire LOR river experiences remain visible as an international destination, similar to what the Batoka Gorge on the Zambezi does for the entire river, both upstream and downstream.

Below Table 1 summarises the distances of the various trail components, albeit the full day or two day high adventure experience.

Table 1: River Distances (Augrabies)

Section	Product	Activity	From	To	Km	Total distance
1	a. Full day high adventure	Hiking	Augrabies Rest Camp	Arrarat	4.00	4.00
		Rafting	Arrarat	Blouputsbrug	18.00	18.00
	b. Two day river safari	Hiking	Augrabies Rest Camp	Arrarat	4.00	4.00
		Rafting	Arrarat	Wabrand Vallei	11.30	18.00
Wabrand vallei	Blouputsbrug		6.70			

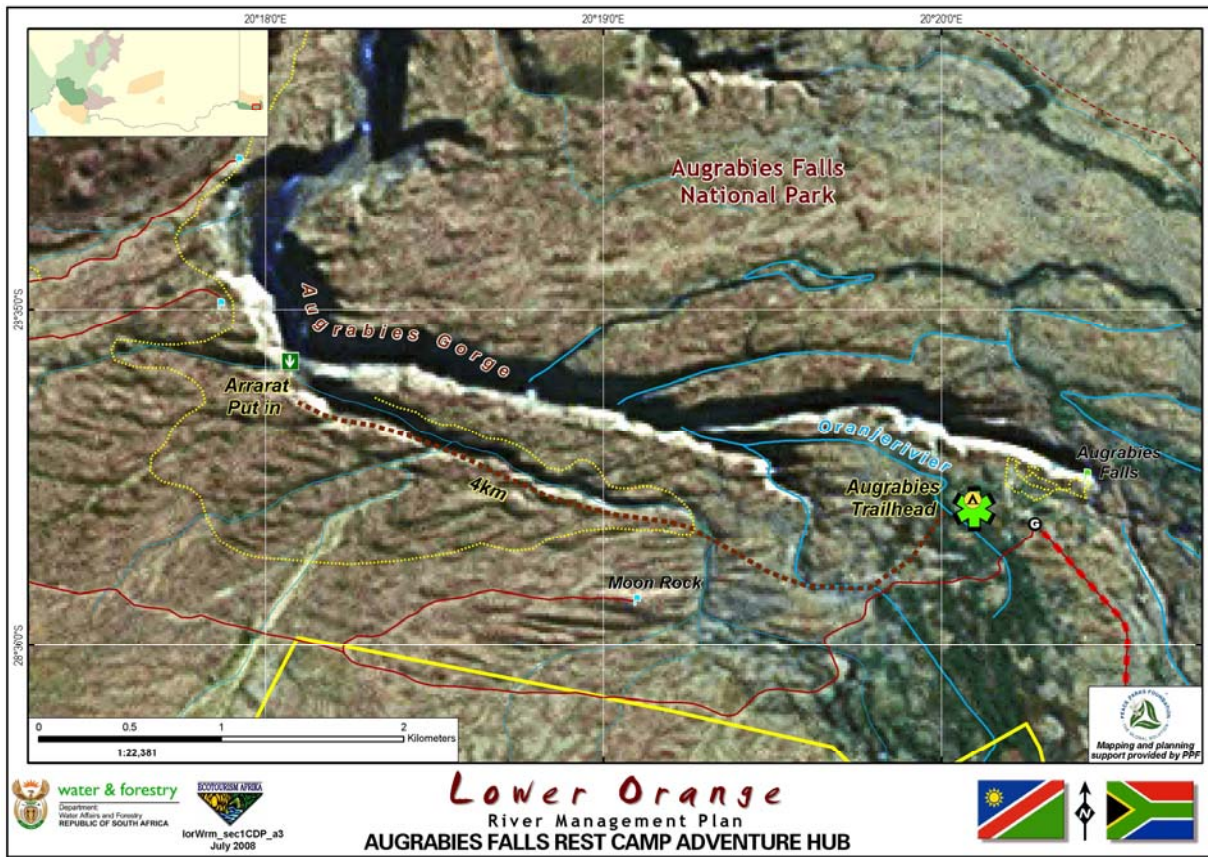
4.3.1.4 Requisite Actions

The following actions are required to ensure that the CDP for this river section can be achieved:

- Discussions with SANParks to change the product, removal of existing infrastructure in the Gorge, and ensure compliance with industry norms and standards;
- Discussions with the Riemvasmaak Community regarding the development of the Blouputsbrug Trailhead, and their participation in a CPPP;
- Prepare a concession agreement based on the South African PPP Toolkit for Tourism and principles contained in the Namibian concession model, between SANParks, the Riemvasmaak Community, and a Private sector operator, with financing through the Community; and,
- Conclude a revenue sharing agreement with the relevant property owners.



Map 51: CDP, Section 1 (Augrabies)



Map 52: CDP, Section 1 (Augrabies Falls Rest Camp Adventure Hub)



Map 53: CDP, Section 1 (Wabrand Wilderness Camp Site)



Map 54: CDP, Section 1 (Blouputs Adventure Hub)

4.3.2 River Section 2 (Riemvasmaak)

4.3.2.1 Integrated Concept Proposal

As part of South Africa’s land restitution programme, the community of Riemvasmaak has received title to and ownership of their land. As part of their viable land use options, the Trustees have used tourism as one of the options on which to base income generating opportunities. Except for one campsite along the river, these tourism options have however not included river based operations, and have been limited to 4x4 routes and camps, as well as a self-catered camp and campsite at the mineral spring close to the Riemvasmaak settlement at Sending.

Options exist to use the river along the Riemvasmaak section of the river, for either single or multi day river trips. Access to the river is via the southern side of the river, along an excellent tar road, or along the northern side, yet this requires a descent via a mountain pass, not ideal for vehicles with low ground clearance.

Single day trips will entail an orientation at the trailhead close to the Blouputs Bridge, and a start at the Molopo Mouth, an important landmark along this section of the river, ending at the Daberas farm. A two day trip will include an overnight stop along the river with an exit/take out at Kwaaiputs in the Augrabies Falls National Park, returning to the Blouputs trailhead. This product should be attractive to an investor or operator, since it builds forth on the high adventure activity within the gorge, but is a lot more accessible to the general public, and can attract visitors from both the AFNP and from the Riemvasmaak area.

As a CPPP, where the Trust makes the concession available, finances the operation, yet allows the operator to assume operational risk, not only will this enable the Riemvasmaak Trust to become an equity shareholder in a river based operation but also enable a co-management agreement between the Riemvasmaak Community as landowner and manager, and SANParks as manager and custodian of South Africa’s natural and cultural heritage. (Refer Figure 19.)

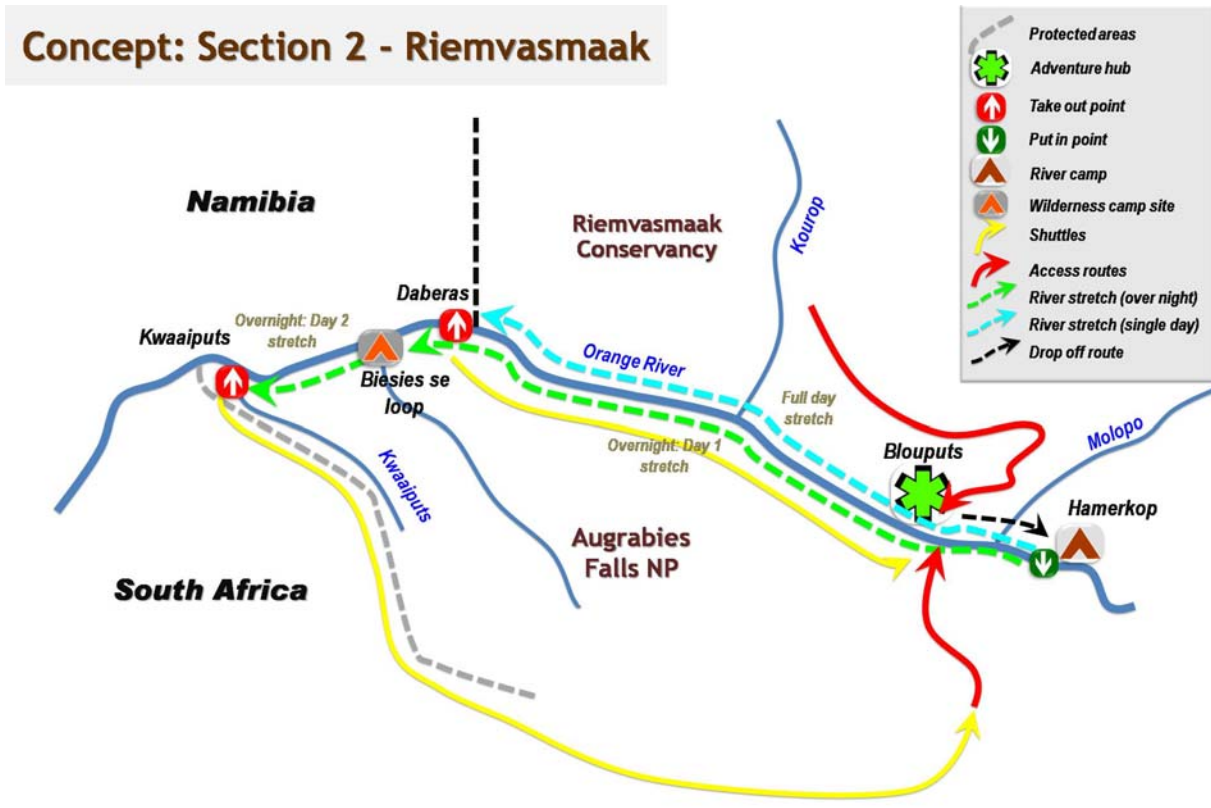


Figure 19: Integrated Concept Proposal, Section 2 (Riemvasmaak)

4.3.2.2 Sensitivities

Agriculture, specifically irrigation and livestock, together with limited settlement impact, influence the character of this section of the river, with most of this section’s riparian integrity ranging from moderately to totally impacted, with only small portions being classified as low impacts or pristine, and these within the Daberas portion of the AFNP.

The easy access along the Blouputs tar road and bridge, as well as the high levels of impact, make this section ideal for larger groups, using the river for soft adventure trips. By linking this to tour groups visiting the Park, or the Riemvasmaak area, this section could offset restrictions placed on visitors within the Gorge, the previous river section.

Critical to unlocking the ecotourism potential of this section is the addressing of social sensitivities associated with the Riemvasmaak Community, the Blouputs farming community, and SANParks. By forming a three way partnership, it would be possible to overcome these sensitivities and establish an environment conducive for investment and operation.

Additionally, concerns by the farming community pertaining to aspects such as people accessing their properties from the river, walking through the vineyards etc., are local sensitivities that must be addressed.

The pristine nature of the river within the Daberas section of the Park would also restrict developments and limit these to wilderness style camping, with no permanent infrastructure or development. (Refer Map 55.)



Map 55: Habitat Integrity, Section 2 (Riemvasmaak)

4.3.2.3 CDP

Targeting a market that is vastly different to that of the previous section, these river trips are accessible to a wide range of visitors, since the river is not technical, the scenery beautiful, and logistics easy. Guests can either meet at the Blouputsbrug Trail Head (refer Maps 56 and 57), or at the Augrabies Falls Hub for the safety briefing and predeparture orientation. A wide variety of vessels could be used, yet the safest option is canoes, probably stable Mohawk style canoes, or inflatable rafts.

From the trailhead guests need to be shuttled to the put-in point at Hamerkop Camp. For guests starting directly from Riemvasmaak this river camp could be used as an optional overnight point prior to the river trip, thereby increasing the occupancy and value of this site. The shuttle from Augrabies to the trailhead and from the trailhead to the put-in point could serve as part of the interpretative experience, providing guests with insight into the natural and cultural diversity of the area, the role that the alluvial deposits play in agricultural development, early prospecting stories, and insight into the colonial struggles that have taken place here over the past century, including the various rebellions and uprisings.

From the put-in point guests will be able to paddle past various landmarks such as the Molopo Orange River confluence, under the Blouputs Bridge, past the various irrigation farms, stopping to take in the scenery visually or photographically, enjoying some of the small rapids along the way. Below the bridge the north bank provides beautiful scenery, while the south bank is characterised by the Blouputs irrigation farms.

A total distance of 26.5km would be available to single day guests, yet due to the easy access from the road through the Blouputs farms, and depending on the level of the river, as well as other aspects such as temperature, wind, fitness levels and focus of the group etc. it would be possible to exit earlier if required, yet ideally guests should experience the full length of this stretch of the river.

Single day guests would be required to exit at the last farm along this section, returning, by use of the operator's shuttle, to the trailhead at the bridge, before continuing with their journey, while overnight guests will continue on to the Biesies se Loop River Camp, a wilderness style campsite along the river within the Daberas section of the AFNP (refer Map 58). The second day would encompass a short paddle to the Kwaaiputs Take-out Point prior to shuttling the guests back to the trailhead from where they can either continue their journey or return to the AFNP Rest Camp, their starting point. The total distance available for the overnight paddling experience would be 35.5km, with the first day consisting of a 29.5km section and the second day only 6km.

This dual starting point opens two direct markets for the concessionaire, and will increase the viability of the operation, and if developed as a CPPP, along the lines of the Namibian concessioning policy, this will significantly increase the benefit flow from the region to, not only the Riemvasmaak Community, but also for the SANParks, and the Blouputs farmers. This approach will also broaden the equity opportunities for the Riemvasmaak Community.

No additional infrastructure, other than the Blouputsbrug Trailhead would be required along this section, unless the concessionaire opts to establish some infrastructure at the Daberas take-out for single day trips, infrastructure that could include a toilet and some shade for guests while the equipment is being loaded.

Due to the environmental sensitivity and character of the Daberas section of the AFNP the overnight stop would not be developed and the concessionaire would need to provide all facilities based on wilderness style camping, bought in by canoe and removed at the end of each trip. The exit at the Kwaaiputs Take-out (refer Map 59) point should remain as remote as possible with only the vehicles required to shuttle guests back waiting for the guests. These vehicles can provide the facilities such as mobile toilets (Port-a-Pottie) and shade through the use of awnings. This will enhance the short bit of wilderness experienced by guests followed by effectively a game drive back to the trailhead.

Interpretation of the landscape, need for conservation and protection, and the history of human settlement is critical, and should form part of the concessioning contract. By managing this as an effective block concession, the various landowners can be assured that access is controlled, and that no guests will get uncontrolled access from the river to their farms, vineyards and properties.

Below Table 2 summarises the distances of the various trail components, albeit the Full day soft adventure or the Two day river safari experience.

Table 2: River Distances (Riemvasmaak)

Section	Product	Activity	From	To	Km	Total distance
2	a. Full day soft adventure	Rafting	Hamerkop	Daberas	26.50	26.50
	b. Two day river safari		Hamerkop	Kwaaiputs	29.50	35.50
			Kwaaiputs	Biesies se Loop	6.00	

4.3.2.4 Requisite Actions

The following actions are required to ensure that the CDP for this river section can be achieved:

- Discussions with the Riemvasmaak Community regarding the development of the Bloutputsbrug Trailhead, and their participation in a CPPP;
- Prepare a concession agreement based on the South African PPP Toolkit for Tourism and Namibian concession model between SANParks, the Riemvasmaak Community, and a Private sector operator, with financing through the Community;
- Discussions with the Daberas Farm owner for the full day soft adventure take-out point;
- Discussions with SANParks regarding the overnight stop and Kwaaiputs take-out; and,
- Conclude a revenue sharing agreement with the relevant property owners.



Map 56: CDP, Section 2 (Riemvasmaak)



Map 57: CDP, Section 2 (Blouputs Adventure Hub)



Map 58: CDP, Section 2 (Daberas take out point and Biesie se Loop WCS)



Map 59: CDP, Section 2 (Kwaaiputs take out point)

4.3.3 River Section 3 (Onseepkans)

4.3.3.1 Integrated Concept Proposal

The section of the river between the western boundary of the AFNP and Onseepkans is currently used by some commercial operators, starting at Byna Bo Farm or Raap-en-Skraap, and ending at Onseepkans. These operators have informal agreements with the landowners providing access, accommodation or camping, yet to ensure security of operations and investment it is recommended that these accesses, accommodation, overnight stops be formalised in Trailhead Agreements.

The concept for this section consists of an Adventure Hub at Raap-en-Skraap farm serving both river trail sections - Byna Bo Farm to Raap-en-Skraap (3 day); and Raap-en-Skraap to Onseepkans Mission (2 day), and trailheads at Byna Bo Farm and the Onseepkans Mission. Having a single hub from which to base operations, the concessionaire can have a full control over guest experiences, as well as equipment, guest vehicles, signage etc. This will require the provision of a shuttle service for guests to the start of the 3 day river section, and from the Mission back to the hub at the end of the 2 day section. This will additionally enable the concessionaire to establish an identity for this section, differentiating it from the other river sections. Undertaken in this way, all aspects of the guest experience can be addressed, specifically signage to get to the hub rather than having several optional accesses, safe parking, orientation, preparatory briefing and debriefing, shuttling, equipment maintenance, etc.

It is recommended that the take-out for this river section be at the Onseepkans Mission rather than the bridge. As a community whose land has recently been restituted, it is imperative that this community plays an active role in the ecotourism development of the region. Additionally, the Mission provides an excellent end to the river trip, since it provides a unique sense of place, is removed from the border post, traffic etc, and affords visitors with a direct link to the community historically associated with this region. (Refer Figure 20.)

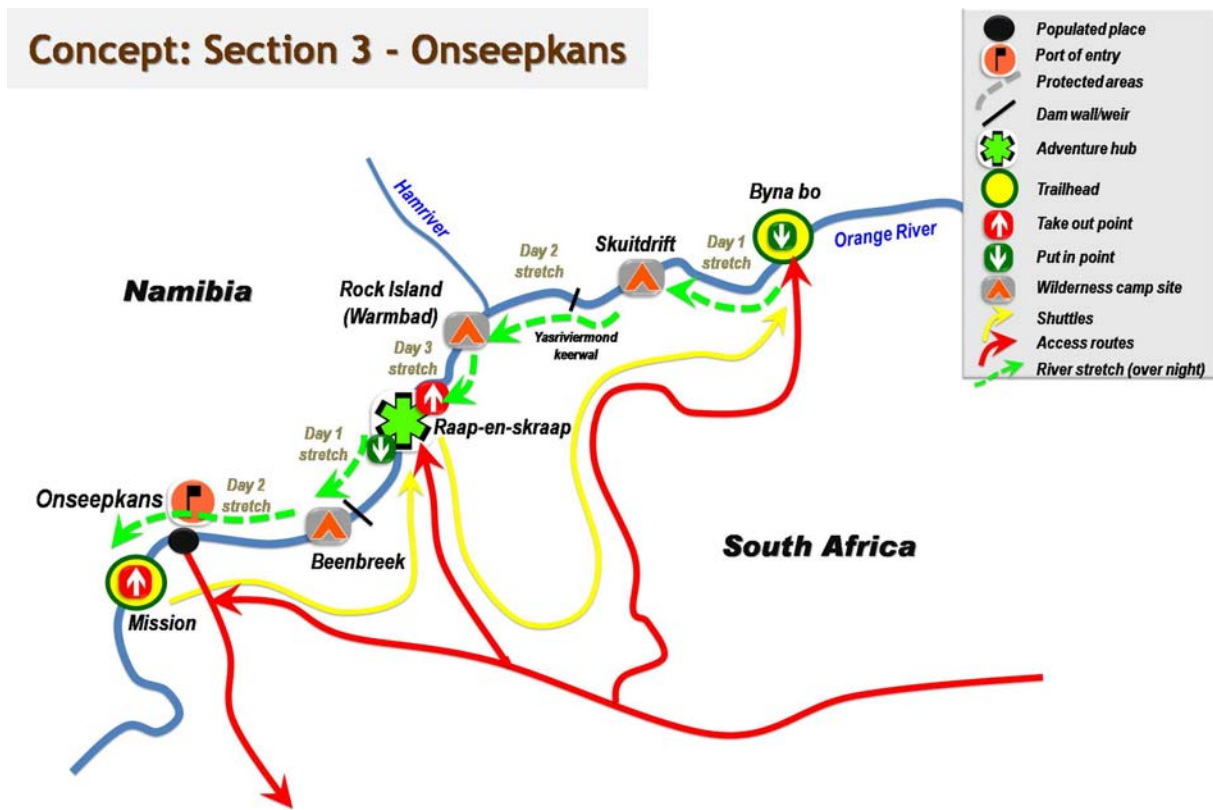


Figure 20: Integrated Concept Proposal, Section 3 (Onseepkans)

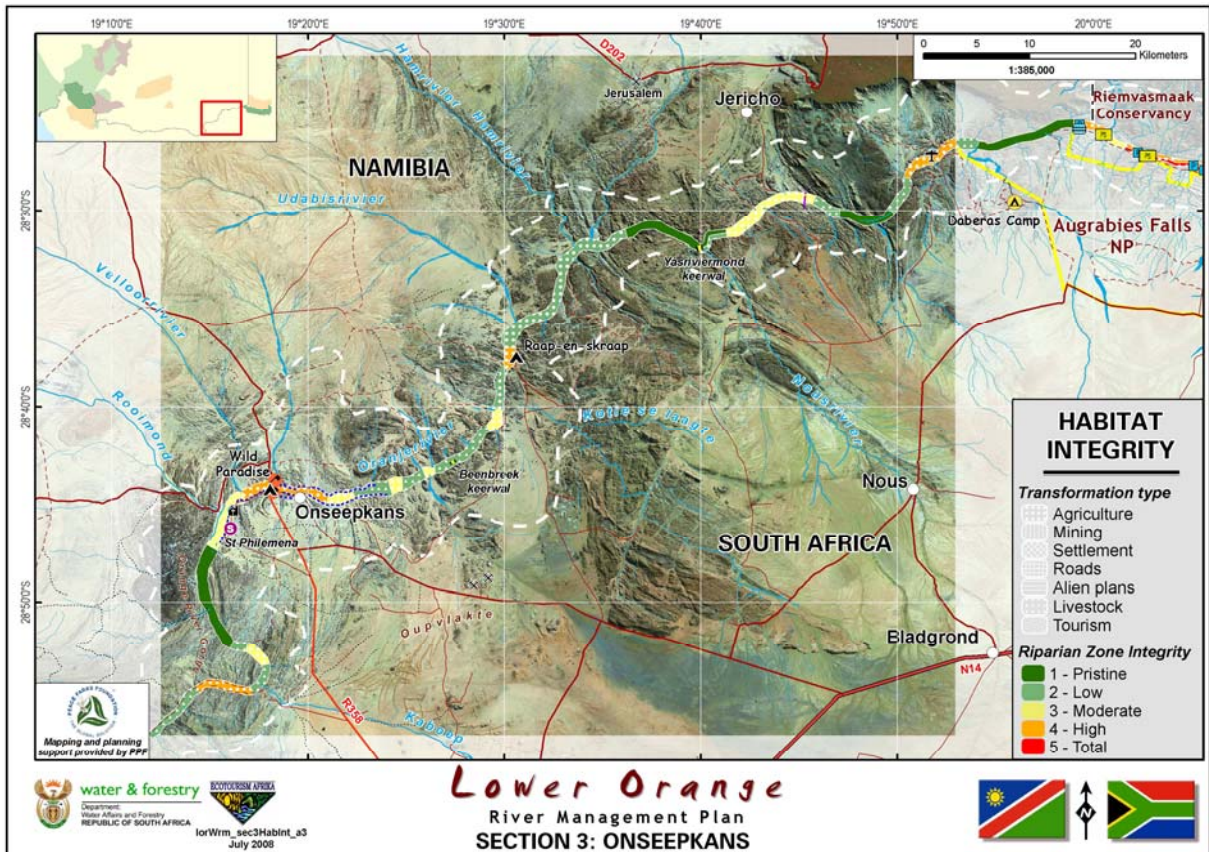
4.3.3.2 Sensitivities

Most of this river section is characterised by riparian habitats that have few impacts, mainly low and moderate, with two short pristine sections, with the impacts mainly coming from agriculture and stockfarming. Three short sections have high levels of impact, these being at Daberas Farm, Raap-en-Skraap Farm, and Onseepkans.

The pristine sections should be respected, and arrangements should be made to assist the landowners in retaining the integrity of these. No permanent infrastructure should be allowed nor encouraged.

Critical to unlocking the ecotourism potential is obtaining a collective approach by the various landowners to their efforts to utilise the river for canoeing and rafting trips. This can be achieved by having clear starting points and trailheads, overnight campsites, and take-out points. It is recommended that the Onseepkans Mission be used as the main take-out point due its strategic position and its historical significance. A percentage of the income generated from these river trips should be allocated to the landowners on both sides of the river depending on their respective contribution, shoreline only, trailhead, overnight stop etc. Additionally, these river trips should not detract from the possibility of the landowners developing other tourism activities such as 4x4 routes etc. which could use the river region as an attraction. The placement of these facilities should however not conflict with the river trip infrastructure nor the design of the experience.

Due to the nature of the river ranging initially from perennial pools, and pools and ripples, to braided and rocky braided, it is essential that commercial trips be guided to ensure that the correct channels and lines be chosen. An advantage of this approach is that the fear of landowners that uncontrolled access to their land, farms, and property can be negated by having control over the operators, their guests and operations, and that access can be planned both along the road, through signage, and the provision of shuttles, and along the river, through guides and operators. (Refer to Map 60.)



Map 60: Habitat Integrity, Section 3 (Onseepkans)

4.3.3.3 CDP

The design of this section of the river is based on the current use patterns, yet aims to formalise this into a concession by limiting aspects such as competition, controlling aspects such as access, and providing benefits to the broader region, aligned with the conservation planning initiatives currently being investigated in the region.

By centrally locating an adventure hub in the middle of this river section it will be possible to facilitate access to the region, through a single set of signage to a single river access point. From this point guests will be shuttled to the put-in point at Byna-Bo farm (refer Maps 61 and 62), which should be developed as a trailhead with toilets, clean water, shade for the safety briefing and orientation, while guests partaking in the two day stretch from Raap-en-Skraap to Onseepkans Mission will receive this at the Adventure Hub at Raap-en-Skraap. The hub will also serve as take-out point for the three day river trail, and as resupply point for guests undertaking the full five day river experience along this section of the river.

Overnight stops or camps must be developed at Skuitdrift (refer Map 63) and Rock Island (refer Map 64), on the farms Skuitdrift and Warmbad, to serve the first portion of the river experience along this river section, and at Beenbreek along the second portion. The adventure hub should include accommodation for guest prior to and after the river safaris.

The three day Byna-Bo to Raap-en-Skraap river experience covers a total distance of 50km, divided into a 17km first day, from the Byna-Bo Trailhead to Skuitdrift, a 21km section from Skuitdrift to Rock Island River camp on the Warmbad farm; and a 12km paddle from Rock Island camp back to the adventure hub at Raap-en-Skraap. The first day is relatively short since this day will include the shuttle to the trailhead, the safety and orientation briefings, getting guests ready for the river, and testing their fitness levels. The second day is longer since more time is available for paddling, probably divided into two leisurely sessions, one in the morning and one in the afternoon, or a long early paddle culminating in a long leisurely afternoon at the Rock Island River Camp, possibly including a visit to the mineral spring that gives the farm its name.

The final day on this section is a relatively short paddle of 12km, allowing sufficient time for guests to continue with their journey, or to resupply if they intend undertaking the four day river trip, which would require a further 14km paddle to the overnight stop at Beenbreek (refer Map 66), a total distance for the day of 26km for the third day of this extended trip.

The two day experience would start with a safety and orientation briefing at the Raap-en-Skraap Adventure Hub (refer Map 65), followed by a leisurely paddle of 14km to the Beenbreek overnight stop. Depending on the fitness levels of the group and the level of the river this can be undertaken in a single or divided paddling session, with a stop for refreshment along the way. The second day entails a 18km paddle to the Onseepkans Mission (refer Map 67). For guests that will be overnighing at the adventure hub this will be followed with a shuttle back to the hub for a relaxing evening before continuing with their journeys, while guests that would like to immediately continue with their journey, a service of transporting their vehicle to the Mission should be offered. However, this would not be optimal in terms of the river experience since guests would be tired after the 18km stretch and night spent along the river. Ideally guests should be encouraged to spend the last night at the Raap-en-Skraap Adventure Hub. This would allow sufficient time for debriefing utilising aspects such as videos and photographs, as well as discussions over a campfire.

The four day option would combine all the river camps, starting at the adventure hub, putting in at Byna-Bo, paddling the 17km to Skuitdrift on the first day, the 21km to Rock Island on the second, 12km to Raap-en-Skraap to resupply followed by a 17km paddle to Beenbreek on the third day, and 18km to the Onseepkans Mission on the last day, prior to being shuttled back to the hub for the last evening, a total distance of 82km over four days. This should be packaged as a stand alone adventure product requiring six days, one for arrival and one for departure, and four nights on the river. Linked to the shorter options, 2 and 3 day, this will significantly increase the viability and marketability of this river section as a concession.

In this light it is recommended that this river section be managed as a single concession product.

Below Table 3 summarises the distances of the various trail components, both the three day and the two day river safari experiences, which can be combined into a four day experience.

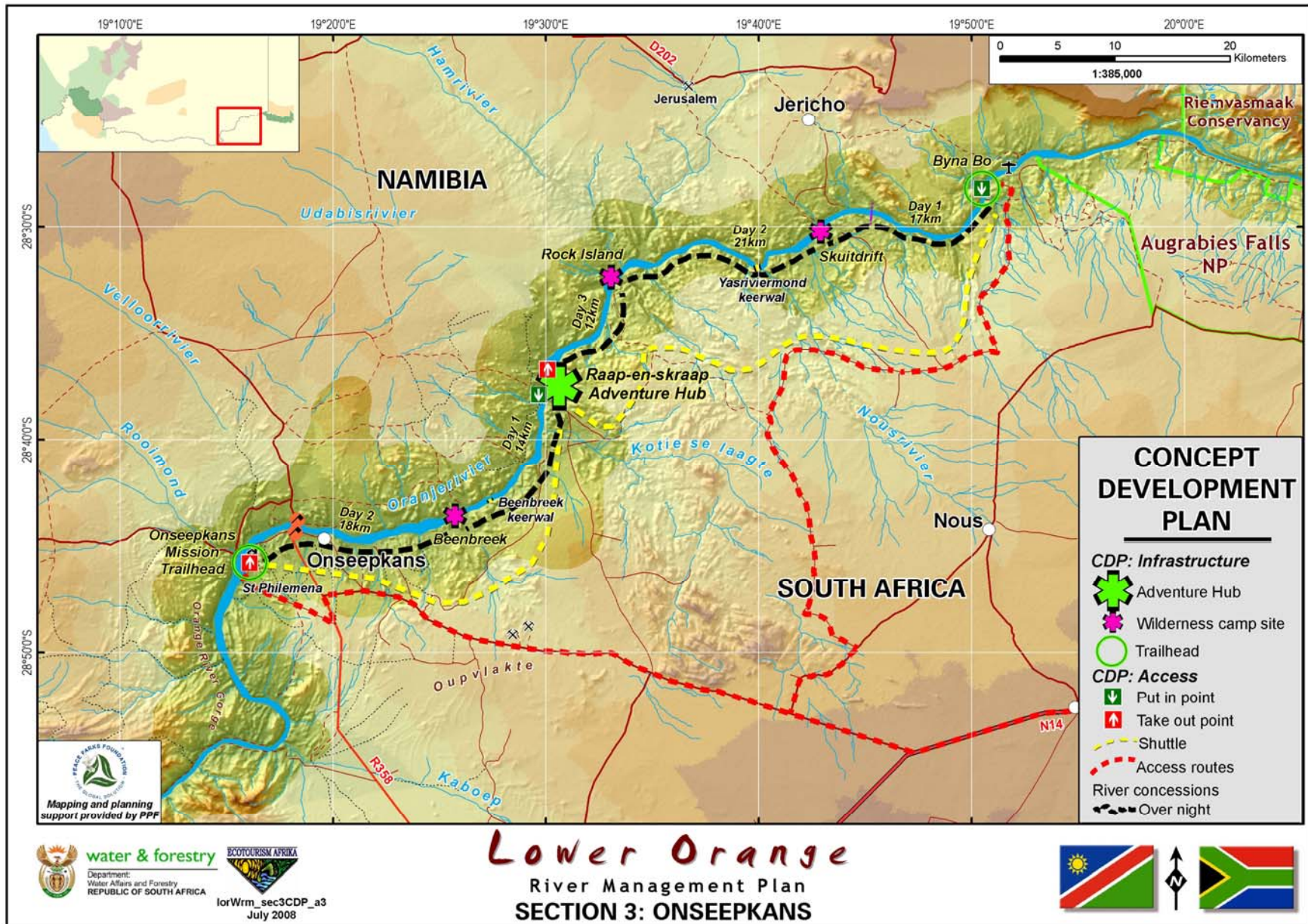
Table 3: River Distances, Section 3 (Onseepkans)

Section	Product	Activity	From	To	Km	Total distance
3	a. Three day river safari	Rafting	Byna bo	Skuitdrift	17.00	50.00
			Skuitdrift	Rock Island (Warmbad)	21.00	
			Rock Island (Warmbad)	Raap-en-skraap	12.00	
	b. Two day river safari		Raap-en-skraap	Beenbreek	14.00	32.00
			Beenbreek	Onseepkans Mission	18.00	

4.3.3.4 Requisite Actions

The following actions are required to ensure that the CDP for this river section can be achieved:

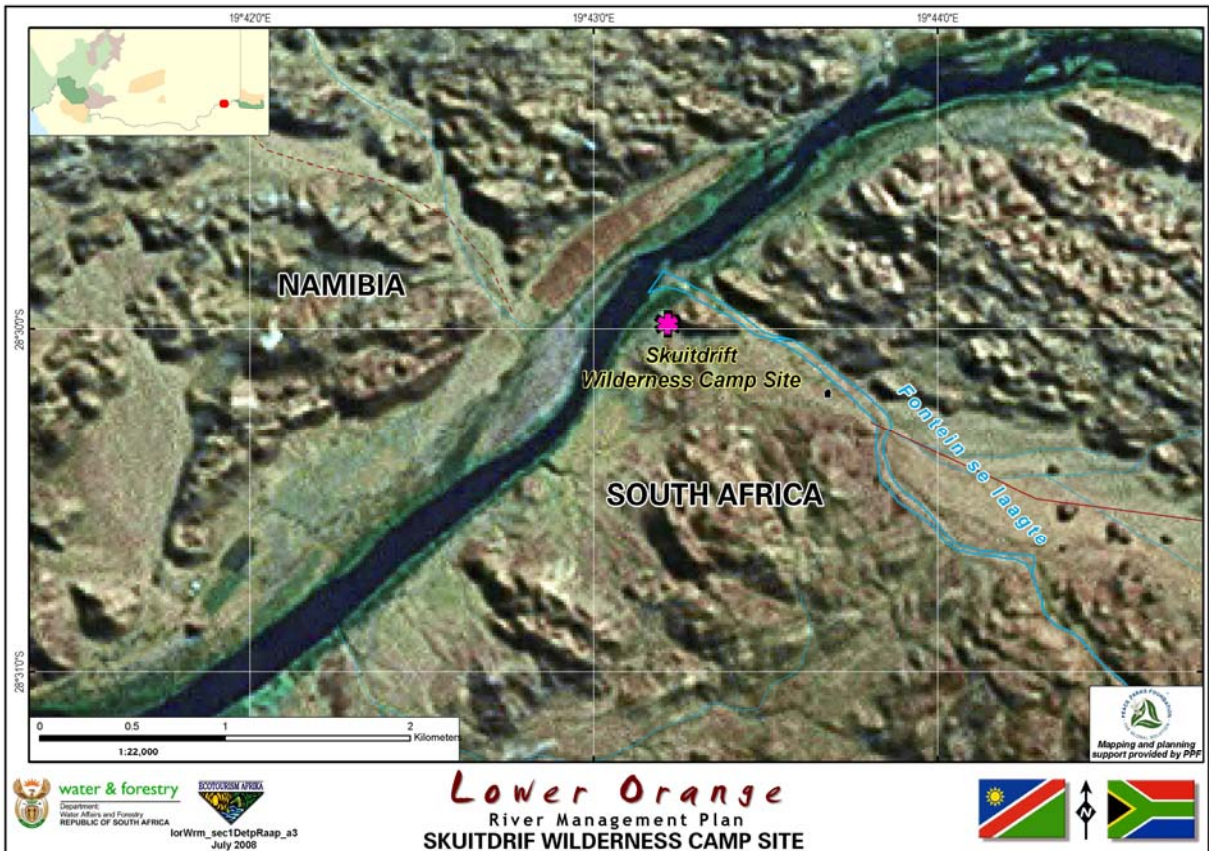
- Discussions with the owners of Raap-en-Skraap farm for the development of the Adventure Hub;
- Discussions with the owners of Byna-Bo farm and the Onseepkans Mission for the development of trailheads at these points;
- Discussions with the owners of property on which the Skuitdrift, Rock Island, and Beenbreek overnight camps are to be developed;
- Conclude a revenue sharing agreement with the relevant property owners;
- Package this as a single river concession, and source an operator.



Map 61: CDP, Section 3 (Onseepkans)



Map 62: CDP, Section 3 (Byna Bo Trailhead)



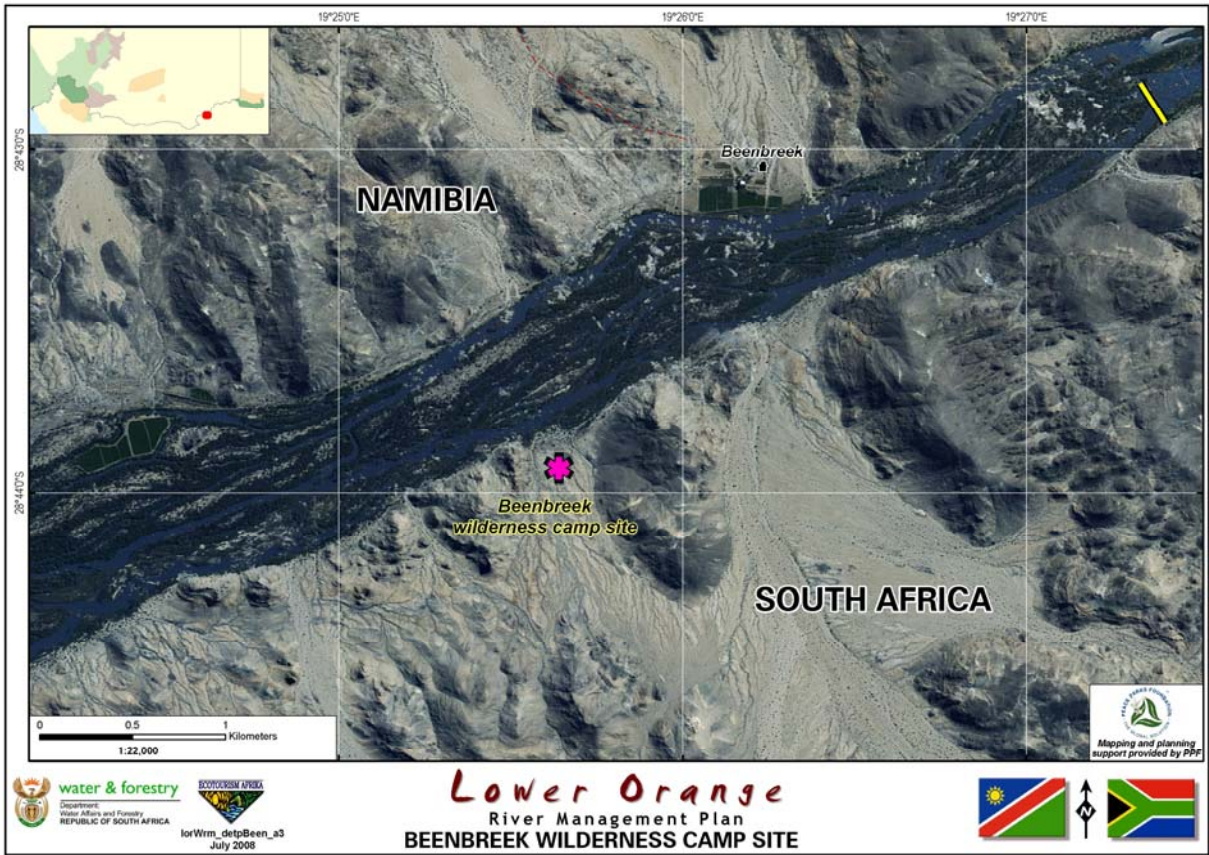
Map 63: CDP, Section 3 (Skuitdrif Wilderness Camp Site)



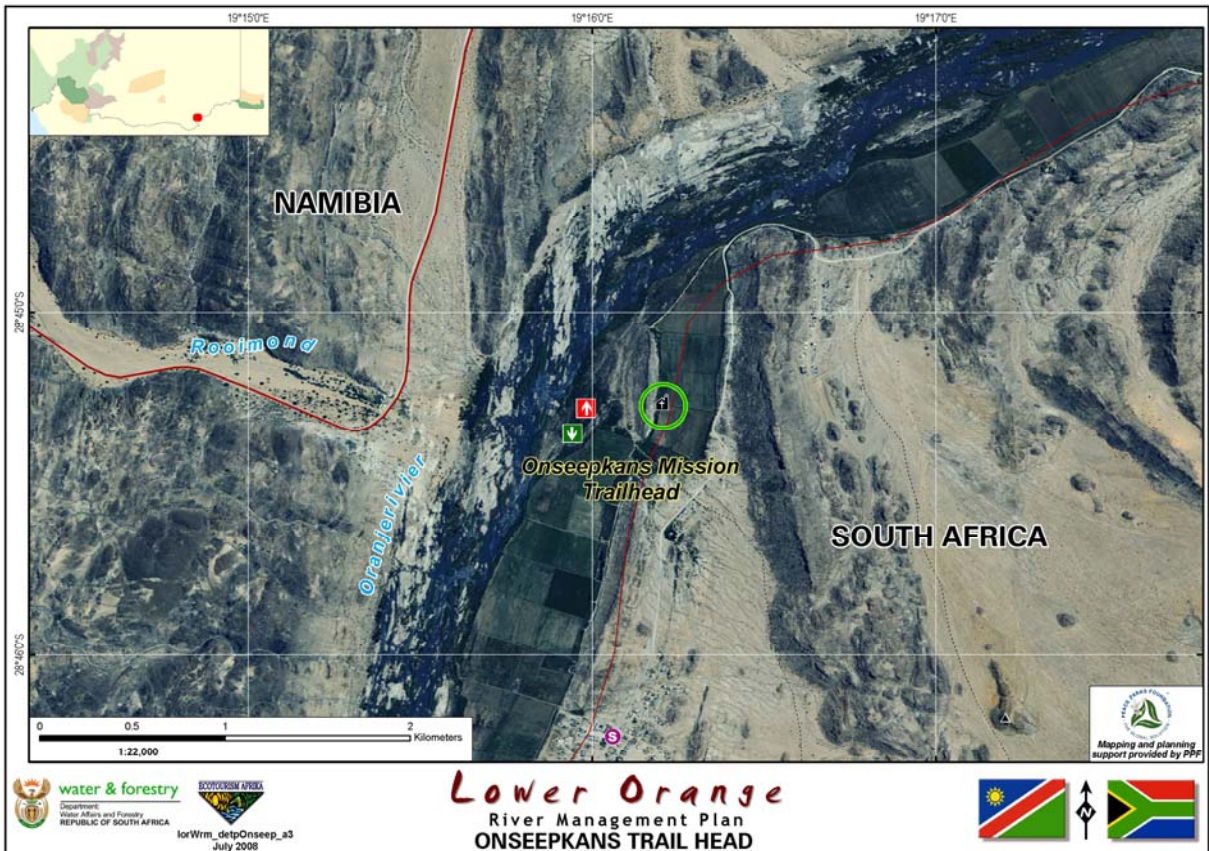
Map 64: CDP, Section 3 (Rock Island Wilderness Camp Site)



Map 65: CDP, Section 3 (Raap-en-Skraap Adventure Hub)



Map 66: CDP, Section 3 (Beenbreek Wilderness Camp Site)



Map 67: CDP, Section 3 (Onseepkans Trailhead)

4.3.4 River Section 4 (Oranjevalle)

4.3.4.1 Integrated Concept Proposal

Even though this section of the LOR is relatively short, it is characterised by complex braiding and a dangerous waterfall. Currently, this section of the river is used for training of river guides, since it provides a myriad of river conditions, all necessary to improve understanding and skills required for river trips. Additionally, this is a beautiful section of the river, with a rich cultural heritage and could be used for two sets of multi-day trips, all starting at Coboop farm, with a trailhead at Onseepkans Mission, and a take-out at Pella Drift, close to Pella Mission, inextricably linking the cultural heritage of the region together.

Due to the specific requirements and standards required for the training of river guides it is recommended that a CPPP be established, where the Onseepkans Trust forms a partnership with an accredited training institute to provide not only river guide training pertaining to safety, rescue, river trip leadership etc. but also for aspects such as catering, equipment care, interpretation etc. Coboop Farm is ideally positioned for this, and provides maximum benefit to the Trust as landowner, equity partner and financier. The private partner will be responsible for the training programme, curriculum and operation, while the public sector can act as conduit for funding of the training programmes on behalf of beneficiary communities such as Riemvasmaak, Onseepkans, Warmbad, Pella, etc. This will broaden the pool of available guides available for employment within the river industry not only along the LOR, but also further afield, and negate the need to continuously import river guides and assistants.

Besides the training component, commercial river trips could be offered along this section as well, both from Onseepkans to Coboop, and from Coboop to Pella. (Refer Figure 21.)

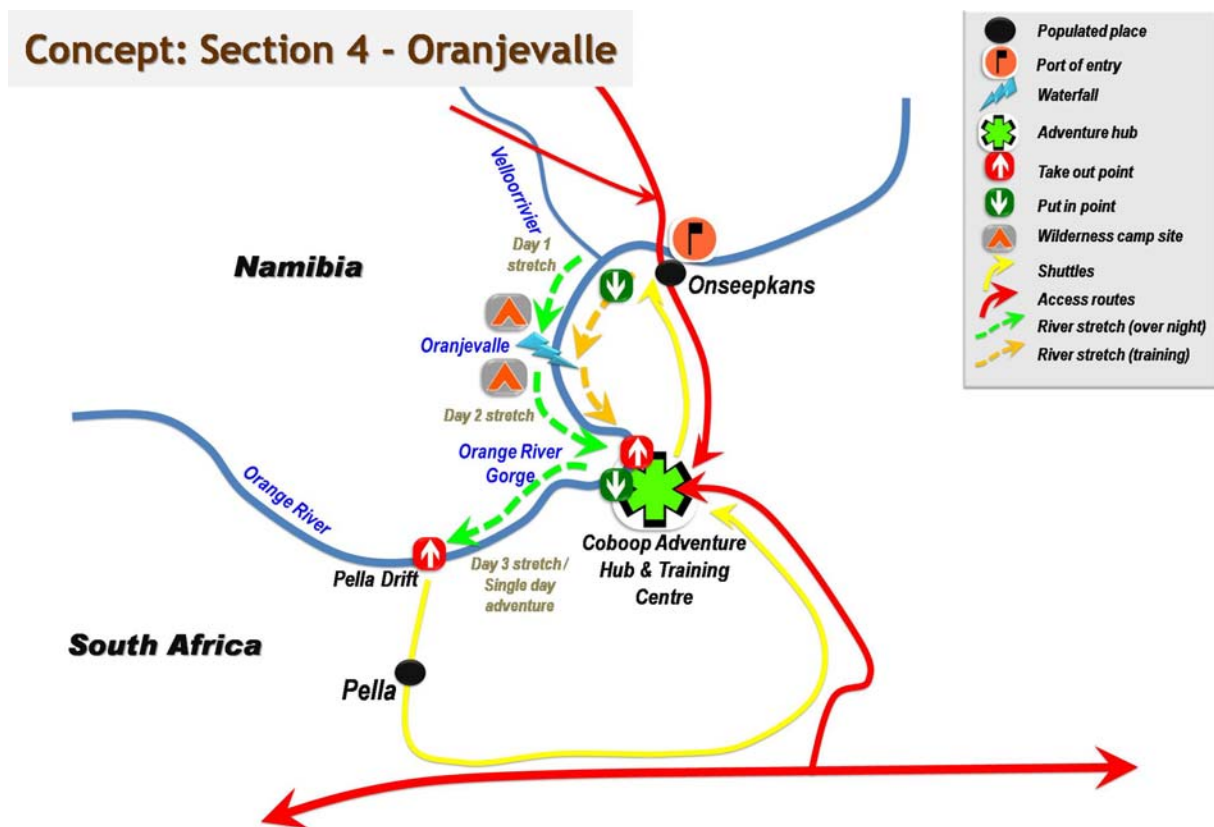


Figure 21: Integrated Concept Proposal, Section 4 (Oranjevalle)

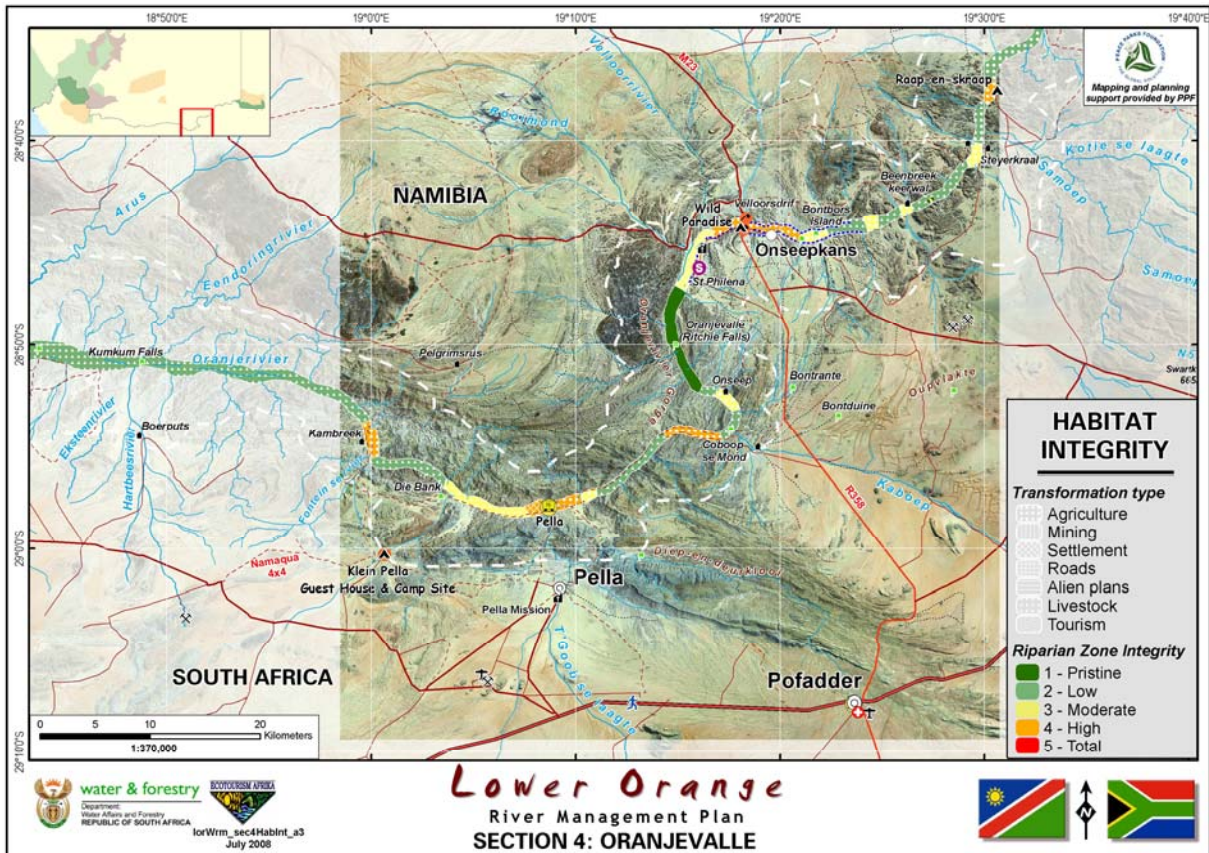
4.3.4.2 Sensitivities

From the Onseepkans Mission, which should serve as trailhead for the start of this river section, as well as take-out for the previous river section, the level of impacts range from moderate to pristine with only two small areas with high levels of impact affecting the integrity of the riparian zone, mostly from agricultural and livestock use, except for the high level of impact at Pella Drift due to the Black Mountain Pump Station, and the impacts as a result of the Pella Mission settlement.

Managing the expectations of both the Onseepkans and Pella communities, both newly restituted in their land, and their relationship with the landowners in Namibia, will be essential to unlocking the ecotourism potential of this section. Since the access is easier from the South African side, and that the Coboop farm offers the possibility of serving as a Hub it will be necessary to formalise an agreement between the owners of Coboop farm - the Onseepkans community - and the operator or concessionaire, for use of facilities in this area. As with other sections a percentage split must be included to ensure that all the contributing landowners are equitably remunerated for their contribution.

Due to the rocky braided nature of the upper reaches of this river section, as well as the presence of the Oranjevalle, it is essential that this river section's river trips be guided, and operated by a single concessionaire, preferably an operator who can also be responsible for the training programmes suggested for this river section. Overnight campsites within the pristine section of the river must be based on wilderness camping principles, with no permanent infrastructure allowed. The status of this pristine section should be formalised by seeking protected area status both in South Africa and Namibia.

The high impact area at Pella Drift should be avoided by exiting higher up and using the scenic route over the mountain pass to Pella Mission when returning to Coboop Hub, and only when extending the trips to travel down the river to pass this major pump station, providing interpretation of the role of water in regional growth and development. (Refer Map 68.)



Map 68: Habitat Integrity, Section 4 (Oranjevalle)

4.3.4.3 CDP

Due to the environmental quality, aesthetic beauty, location and importance of, and limited length of this river section, linked to the danger posed by the Oranjevalle, it is recommended that this river section be packaged as a single operator concession, where the operator would be responsible for both the commercial trips, and the training programmes.

The river safaris would be either three days in length, requiring two nights on the river, or four days by extending the trip to include the river section from Coboop to Pella Drift, requiring an additional overnight stop, ideally close to Coboop where resupply can be facilitated.

The three day experience would require that guests arrive at Coboop, overnighing at the Adventure Hub, prior to receiving the safety and orientation briefing before being shuttled to the trailhead at the Onseepkans Mission, for final preparation and safety checks. The first day entails only a paddle of 9.5km, yet due to the technical difficulty of this section, this requires the majority of the day to successfully and safely complete. The overnight stop would be just above the Oranjevalle (refer Maps 69 and 70), and must be based on best practice for wilderness camping.

The second day would merely entail abseiling down the falls with all the equipment and boats, and setting up camp below the falls. This day would be linked to safety, training and paddling fun. The third day would entail a paddle of 10.5km to the Coboop Adventure Hub for final debriefing and departure.

The extended option would entail a further paddle of 18km to the Pelladrift Take-out point, prior to shuttling back to Coboop. The total distance for the three day river safari would be 20km, while the four day safari would be 38km.

Due to the technical nature of this river section, as well as its central location within the entire LOR region, it is recommended that the current river guide training programmes be retained, yet expanded to include other aspects of river trips, and ecotourism product presentation. To facilitate these training programmes it is recommended that the farmhouse at Coboop be converted into an ecotourism college (refer Map 71), similar to the Wildlife College at Orpen, and the Tourism College at Graaff Reinet. The focus of this college should be on formal river guide training, trip leaders, camp attendants, cooks, porters etc. and must be linked to the Tourism and Hospitality Education and Training Authority (THETA) and South African Qualifications Authority (SAQA) standards, as well as industry norms and standards.

This will provide the Onseepkans Community with the possibility of broadening the opportunities for generating income from their newly acquired farm, as well as contribute to broadening the skills base within the region. Critical to this would be a three way partnership between the Onseepkans Community, the South African Government, and a reputable operator with proven training skills and programmes.

Infrastructurally, the Coboop farmhouse would require refurbishment to operate as a accredited training facility offering short courses required by the river industry, as well as the provision of equipment, such as different boats and camping gear, as well as an overnight stop close to Coboop for the extended river trips linking the Onseepkans Mission to the Pella Mission via the river.

Critical to the success of this river safari experience would be the packaging of the interpretative experience to extend beyond merely focussing on the paddling skills required, or abseiling, but also incorporating cultural and biodiversity aspects in an effort to provide a complete experience, despite the high adventure that underlies this entire experience. The basics for this culturally correct interpretation should be sought through a cultural mapping exercise undertaken with the Onseepkans and Pella communities.

The take-out point at Pelladrift should be sufficiently upstream of the major pump station of Black Mountain Mine located here, so as to avoid the visual impact of this infrastructure. The shuttle could possibly utilise the 4x4 route over the mountain dropping into Pella Mission from the mountains, rather than using the easier, yet heavily impacted route along the pipeline. The history of the two missions at Onseepkans and Pella should receive strong emphasis along this portion of the river experience, as should the cultural diversity, as well as descriptions of the role that the Pella Hills play in increasing the biodiversity of the region.

Below Table 4 summarises the distances of the various trail components, both the three day training and high adventure river safari and the one day river safari extension, which can be combined into a four day experience.

Table 4: River Distances, Section 4 (Oranjevalle)

Section	Product	Activity	From	To	Km	Total distance
4	a. Three day training / high adventure river safari	Rafting	Onseepkans Mission	Oranjevalle	9.50	20.00
			Oranjevalle	Coboop	10.50	
	b. One day river safari extension		Coboop	Pella Drift	18.00	18.00

4.3.4.4 Requisite Actions

The following actions are required to ensure that the CDP for this river section can be achieved:

- Discussion with the Onseepkans Community regarding the development of Coboop as a training facility;
- Discussions with trainers and training authorities regarding possible programmes and recognition;
- Discussions with the Peace Parks Foundation for possible involvement due to their experience and knowledge at the Wildlife College and Tourism College;
- Undertake a cultural mapping exercise with the Onseepkans and Pella communities;
- Packaging of this river section as a concession; and,
- Conclude a revenue sharing agreement with the relevant property owners



Map 69: CDP, Section 4 (Oranjevalle)



Map 70: CDP, Section 4 (Oranjevalle Wilderness Camp Sites)



Map 71: CDP, Section 4 (Coboop Training Centre)

4.3.5 River Section 5 (Pella)

4.3.5.1 *Integrated Concept Proposal*

The Bondelswarts Community, a clan within the broader Nama Community, within southern Namibia and South Africa in the vicinity of Pella, proposed tourism products based on the cultural heritage of the Region, a heritage intimately intertwined with human settlement of the Region. This includes aspects such as cultural use of the landscape; the conflict associated with the colonial settlement and domination; the various uprisings and rebellions which characterised the Region; as well as unique architecture, dress, language, stories, myths and legends associated with the Region.

This includes the value of the Orange River, locally known as the Gariiep or Great River, as lifeline for this community, currently divided by the colonial border along the river. This link, both physically and culturally, is still intact, albeit divided by the border, making this an ideal transboundary conservation area, for both natural and cultural resources. Locally the links follow the traditional connectivity associated with settlements such as Warmbad, Pella, and Goodhouse, closely associated with the historic crossings at Pella, Ramaansdrift, and Goodhouse.

The Namibian product would constitute an adventure hub at Warmbad, consisting of a lodge utilising one of the old German colonial buildings serving as a base for ecotourists participating in the experience, an open game vehicle drive to Pella drift, followed by a multi-day canoe trip culminating in a historical route following the Houms River, a river that featured prominently in the uprisings and rebellions in 1905 and 1922. As a heritage route, this combination adventure will enable interpretation of the various cultural heritage aspects in an interesting manner compliant with the needs and expectations of the modern ecotourism market.

Infrastructure requirements for this product would entail the establishment of a lodge at Warmbad utilising one of the old buildings, two river based safari camps and one desert safari camp along the Houms River. This would enable the establishment of a five day cultural heritage product starting and ending in Warmbad, re-establishing this settlement as a gateway to the Region, and specifically the TFCA. In this way, the development of the Nama Sandloper Tourism route can be supported, rather than relying on the tourism route placing prominence on the town without a reason for visiting, besides visiting the hot springs facility.

Support for this product should lead to broader support for conservation initiatives in the Region, specifically for the Gamaseb and Warmbad Conservancy, as well as for the proposed Sandfontein Game Reserve. As a CPPP this product could show support for tourism and conservation initiatives aimed at providing equitable access to resources both natural and cultural, in an equitable and sustainable manner. Besides creating numerous opportunities for investment – facilities, operation, vehicles, and vessels – opportunities will also be created for training and employment.

This approach to unlocking the ecotourism potential of the Warmbad Region through the establishment of a heritage safari, also provides significant opportunity for a financial model which the Bondelswarts Community can be the holder of the development and operational rights, as well as the financier, while the private sector operator ensures efficient and effective operation, marketing and guest experience management, with the affected landowners receiving a percentage of the turnover for the contribution that they make.

From Pella, on the South African side, it is proposed that two river trips be planned and developed, based on the current utilisation patterns of commercial operators. The first river trip (3 day) is from Pella Drift to Houmsrivier, while the second river trip (2 day) is from Houmsrivier to Goodhouse. Both river trips have a strong cultural storyline, set within the natural beauty of the area. Interpretation of the cultural use of natural resources is important such as the drifts, alluvial deposits, grazing, river beds, ephemeral streams, springs etc., as well as the role of the Catholic Church, missionaries, settlers, prospectors and traders, as well as colonial forces, and the impact of Apartheid policies on communities.

It is recommended that Pella Mission serve as the adventure hub due to its accessibility and cultural importance, while trailheads be established at Houmsrivier (Witbank) and Goodhouse. The trailhead at Houmsrivier will serve as end to the Pella-Houmsrivier river trip, and as the start for the Houmsrivier-

Goodhouse river trip, as well as a resupply point for combination trips along this river section enabling 5 day river trips from Pella to Goodhouse.

Overnight stops are proposed for Kambreek, Kum-Kum Falls, Houmsrivier, and Groot Melkboom.

A concession agreement needs to be finalised between the operator and the Pella, Witbank, and Goodhouse communities, and should be linked wherever possible with the ecotourism and cultural conservation initiatives of the Bondelswarts Community in Namibia. (Refer Figure 22.)

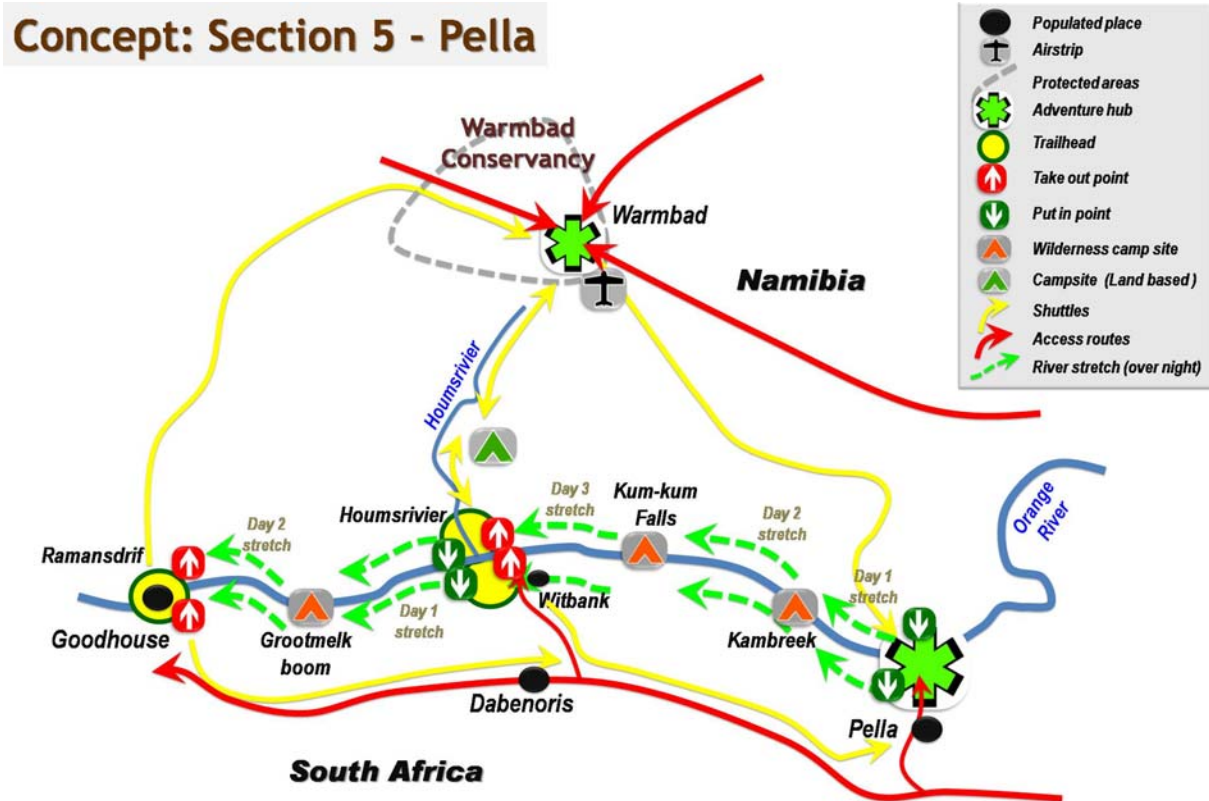


Figure 22: Integrated Concept Proposal, Section 5 (Pella)

4.3.5.2 Sensitivities

Besides the high and moderate impacts at Pella Drift, Witbank, and Goodhouse, the largest portion of this river section is characterised by low impacts on the riparian habitat, mainly as a result of livestock farming and the presence of alien plants.

Due to the different tenure systems between South Africa and Namibia, one of the main sensitivities will be to find a mechanism for a conducive arrangement between the communal structures in South Africa and the private ownership in Namibia. If based on a business model, utilising concessionaires, and a percentage split system based on relative contribution, the potential conflict that could arise may be negated.

Beside the ripple and pools close to Pella Drift, this river section is characterised by a braided river landscape with dense vegetation, creating a complex, difficult and dangerous experience for inexperienced paddlers. In this light, it is suggested that the commercial river trips be guided.

To provide the affected communities with maximum benefit, it is important that opportunity is created for equity involvement by these communities. To achieve this it is recommended that a partnership between the communal structures and the private sector operators or concessionaires be formed regarding not only

the concession opportunity but also the financing of the operation. Broader benefit will be shared between the respective landowners based on their respective contribution of shoreline and overnight campsites.

This portion of the river has vast amounts of cultural resources linked to the Bondelswarts Community, as well as settler and colonial history. These should be incorporated into the river experience, and provide a broadening of the experience offered to guests by guides, yet this would require incorporation into the training programme discussed in the previous section. (Refer Map 72.)



Map 72: Habitat Integrity, Section 5 (Pella)

4.3.5.3 CDP

Two distinct products are offered within this section of the river, the first being Namibian products, and the second South African products (refer Map 73).

The Namibian products' viability depends on an agreement being attained between the landowners and the Bondelswarts Community for access to, and use of, land with strong cultural ties to this community. Access will be for the development and operation of a cultural product that will link Warmbad to the Orange River, in an equitable and sustainable manner, and development will be directly linked to this product in the form of four wilderness style river campsites, and one desert campsite for interpretation of the role that the Houmsrivier played during the uprisings and rebellions. The product will, by design, be guided, utilising open game drive vehicles to shuttle guests from Warmbad to the river at Pelladrift or at Houmsrivier, and back from the river via Houmsrivier or Goodhouse depending on the specific product and take-out point.

The first river experience will entail guests overnighting at a lodge in Warmbad, preferably in one of the old German buildings, which will serve as the Adventure Hub for this section of the river, after which they will be shuttled by game drive vehicle to Pelladrift, to embark on the three paddling sections within this cultural experience, the first from Pelladrift to Kambreek, a distance of 18km, the second from Kambreek (refer Map 75) to the Kum-Kum Falls (refer Map 76), a distance of 21km, and the third from the falls to the Houmsrivier, a distance of 19km, a total distance on the river of 58km, over three days. After exiting the river at the

Houmsrivier, guests will be shuttled to the Desert Camp (refer Map 78), for the third night of the experience. This night will sharply contrast with the nights spent on the river and highlight the importance that these tributaries played during the uprisings. From here guests will be shuttled by game drive vehicle to Warmbad, from where they can continue with their journey, filled with insight into the cultural use of the landscape, and the region's history.

A second three day cultural experience consists of the utilisation of the Desert Camp as overnight stop en route to the river from Warmbad on Day 1. The second day entails a short drive to the Houmsrivier Trailhead (refer Map 77) on the river and paddling to the Grootmelkboom area to a wilderness style river camp (refer Map 79), a distance of 25km. The third day would entail guests paddling to the take-out point at Goodhouse (refer Map 80), a distance of 17km, before returning, via the historically important route, from Goodhouse to Warmbad, to either enjoy the hot springs, or to continue with their journey.

These two Namibian products could be combined to make a five day river experience, starting at Warmbad, shuttling to Pelladrift, and paddling along the river, with four overnight stops, exiting at Goodhouse, and returning to Warmbad.

The South African products follow a similar design, except that the Pella Mission serves as the Adventure Hub (refer Map 74), similar to Warmbad on the Namibian side. From here guests will be shuttled to the river at Pelladrift, sufficiently downstream to avoid the visual intrusion of the pumpstation, for the three day experience, or to the Houmsrivier Trailhead to embark on the two day experience. From the respective take-out points, either at Houmsrivier or at Goodhouse, guests will be shuttled back to the hub at Pella Mission. These two sections can be linked to enable a five day experience. The total distance would be 100km.

Despite the individual products using the same stretch of the river and having similar designs, the focus of the products can differ quite dramatically. From Warmbad the focus should be on the various rebellions and uprisings in the region, the role that colonialism played in these, the outcomes thereof, while from Pella the focus can be on the role of Catholicism, the role of Apartheid on community development, and on the rich biodiversity of the area.

Four distinct groupings within the historically disadvantaged communities are affected by, and have a direct role to play in these products, the Bondelswarts at Warmbad in Namibia, and the Pella, Witbank, and Goodhouse communities in South Africa. It is recommended that, despite the cultural linkages that exist between these four communities, that the products be developed and operated as country specific products. This will enable maximum support to be given by each country's Government to the development of equitable participation by these communities without raising issues of transboundary collaboration. It is just easier.

Additionally, it is recommended that the products be packaged as concession opportunities based in either Warmbad, Namibia, or at the Pella Mission, South Africa. Due to the strong communal involvement and contribution it is further recommended that the financing options seriously consider direct equity by the affected communities, either through donor funding, grants and soft loans, or a combination of these. This should include the Adventure Hubs in the respective countries – these can be in the form of lodges with sufficient parking, storage, and equipment maintenance facilities – vehicles, vessels, and camping equipment. This would reduce the risk of the private sector operator, and significantly increase the benefits to the respective communities.

Once the proposed TFCA is fully operational the possibility exists to combine these products into full scale cross border products where the guests would be able to transfer from one country to the next without necessarily passing through a border post and immigration control measures. This would enable guests from Warmbad to visit the Pella Mission, use the river to transfer to either the Houmsrivier or the Goodhouse take-out before returning to Warmbad, as vice versa, effectively figure of eight journeys on land and river. This is currently not possible and will await further clarification in terms of the transfrontier conservation plans being drafted and discussed within each country and collectively between the countries. This would however truly re-establish the severed cultural ties that currently exist in this area as a result of colonial border demarcation.

Below Table 5 summarises the distances of the various trail components, both the three day river safari, on either side of the river, and the additional two day river safari, which can be combined with the three day experience to make a five day experience.

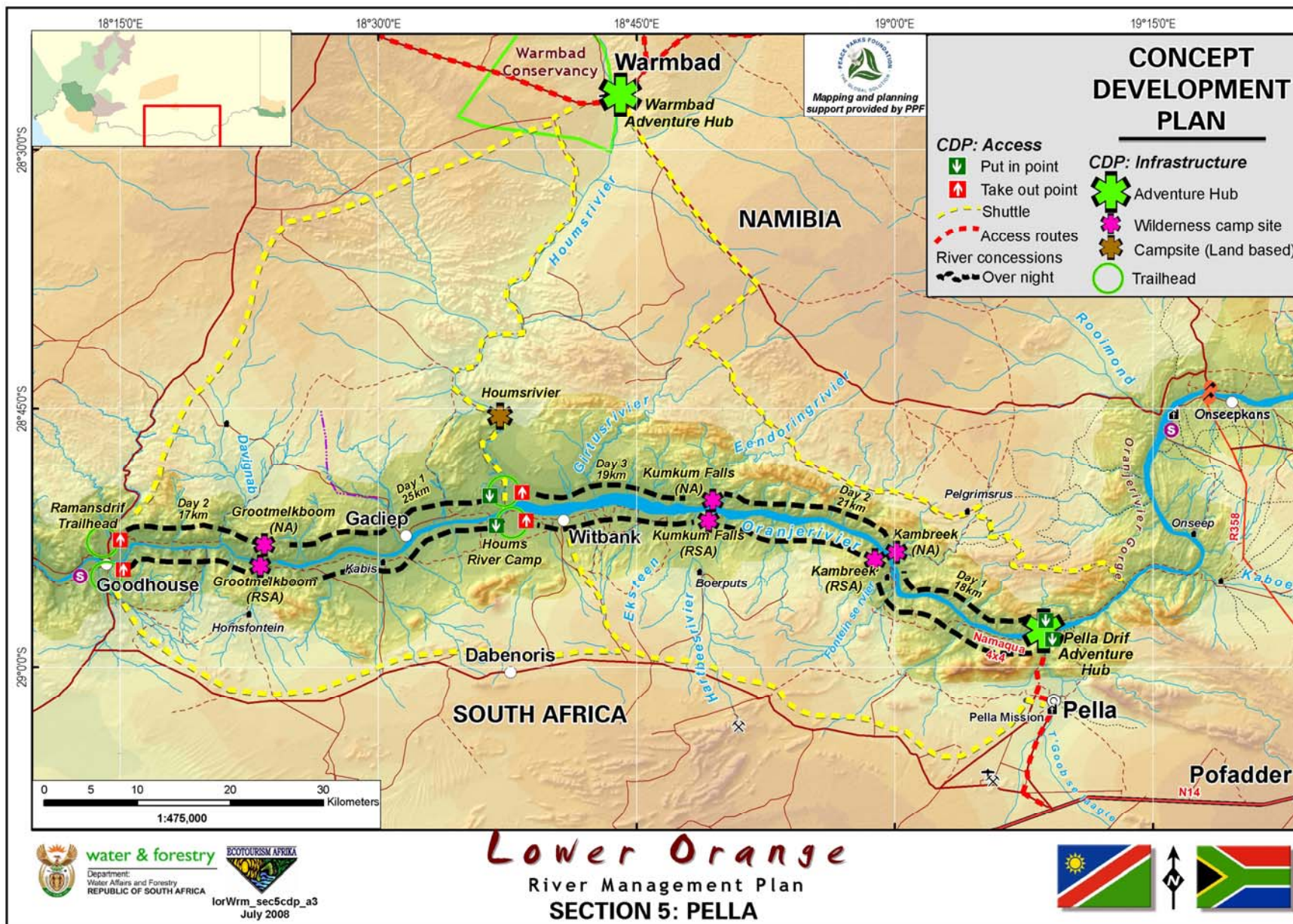
Table 5: River Distances, Section 5 (Pella)

Section	Product	Activity	From	To	Km	Total distance
5	a. Three day river safari	Rafting	Pella Drift	Kambreek	18.00	58.00
			Kambreek	Kum-kum Falls	21.00	
			Kum-kum Falls	Houmsrivier	19.00	
	b. Two day river safari		Houmsrivier	Grootmelkboom	25.00	42.00
			Grootmelkboom	Goodhouse	17.00	

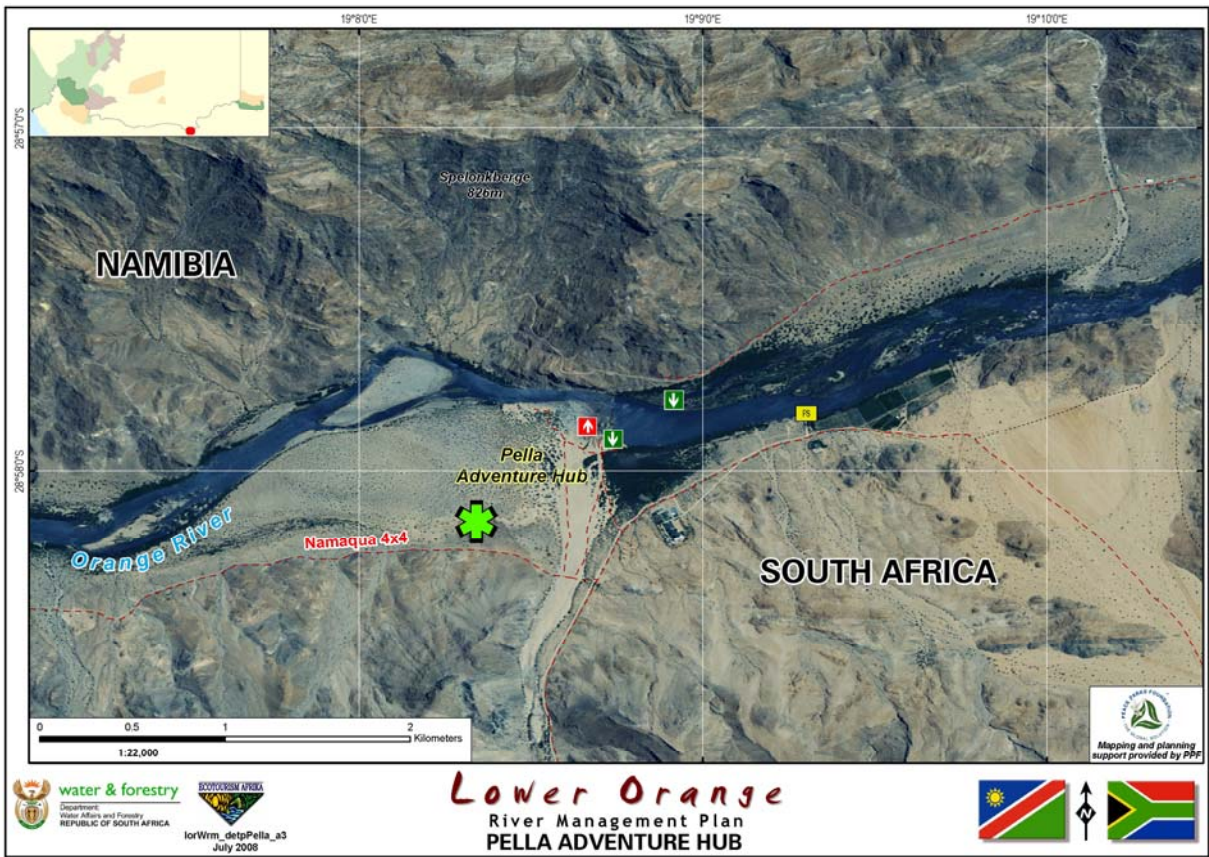
4.3.5.4 Requisite Actions

The following actions are required to ensure that the CDP for this river section can be achieved:

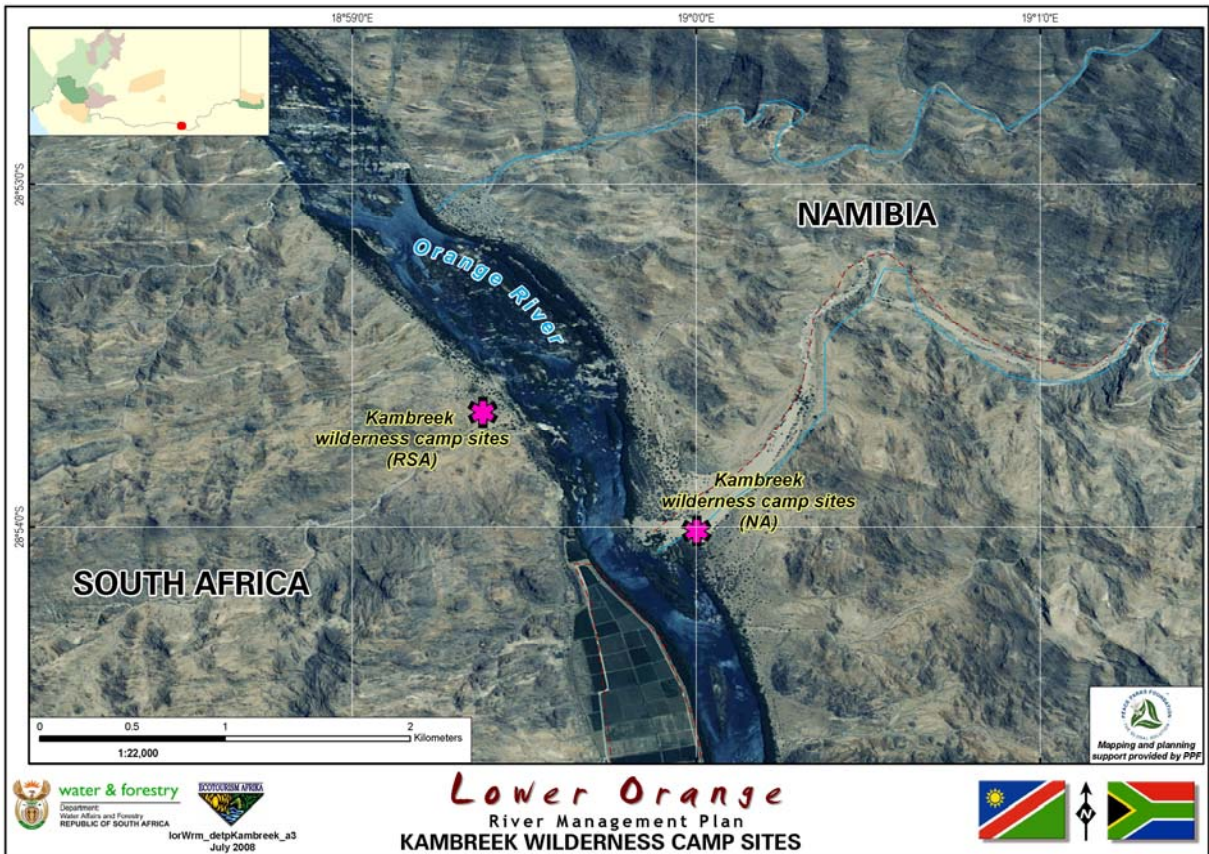
- Discuss with, and compile agreement for the various landowners on the Namibian side for access, use and development to enable the development of the Bondelswarts cultural experiences;
- Discuss with the Pella, Witbank, and Goodhouse communities for the development of a joint concession on the South African side;
- Packaging of these river sections as individual concessions; and,
- Conclude a revenue sharing agreement with the relevant property owners.



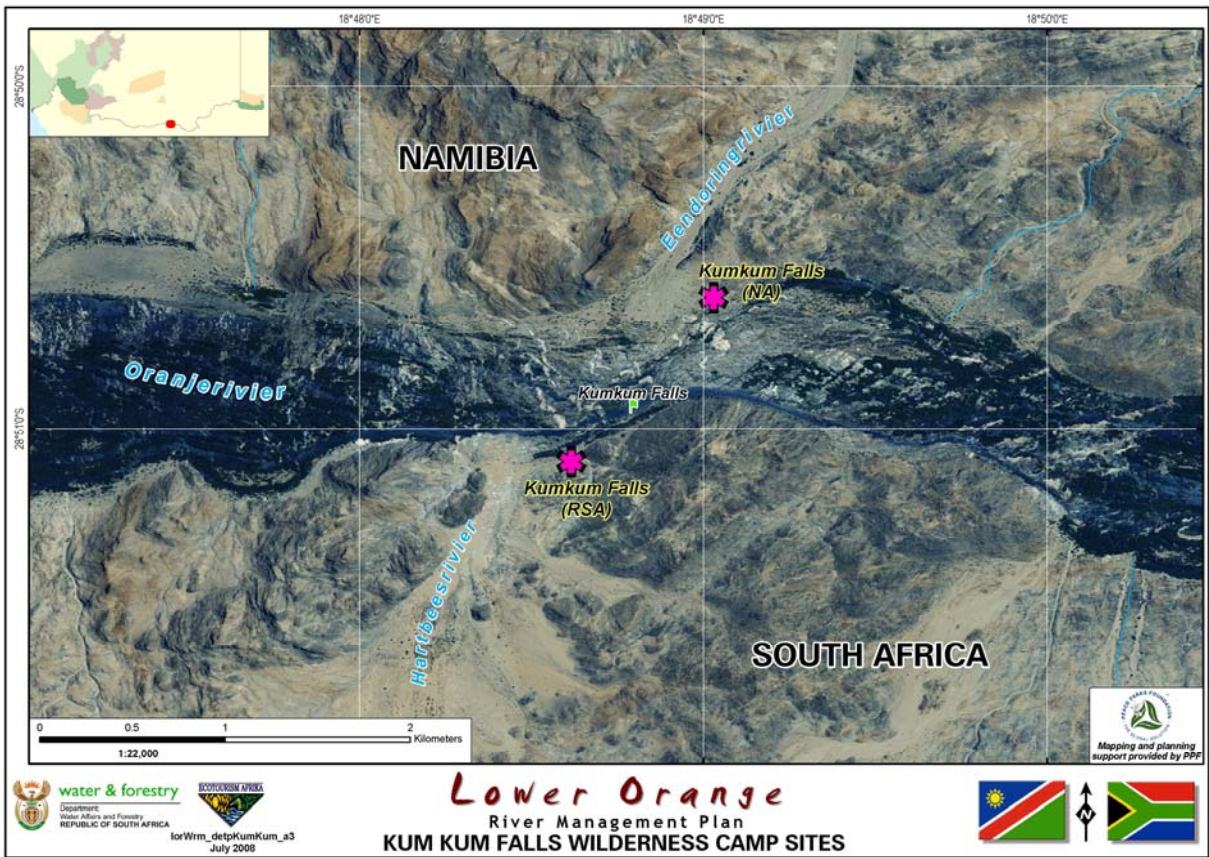
Map 73: CDP, Section 5 (Pella)



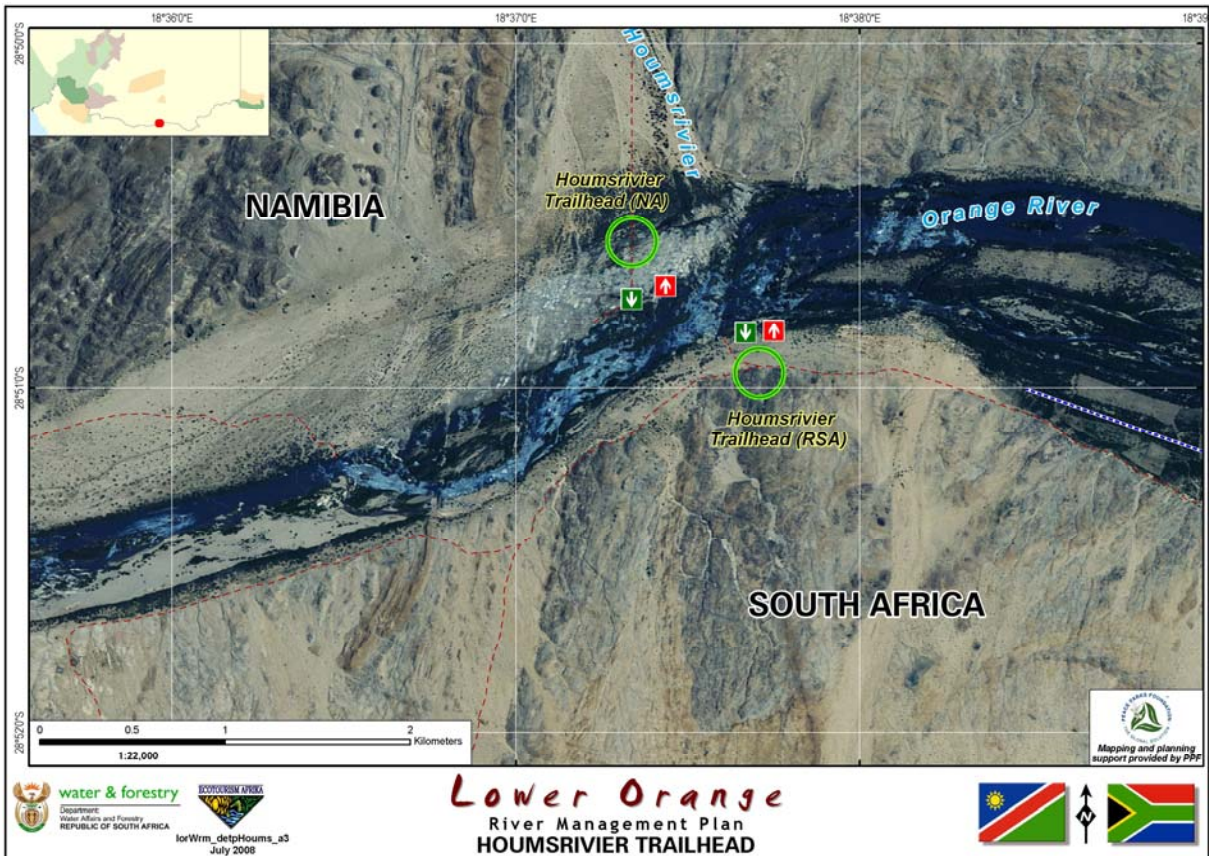
Map 74: CDP, Section 5 (Pella Adventure Hub)



Map 75: CDP, Section 5 (Kambreek Wilderness Camp Sites)



Map 76: CDP, Section 5 (Kum Kum Falls Wilderness Camp Sites)



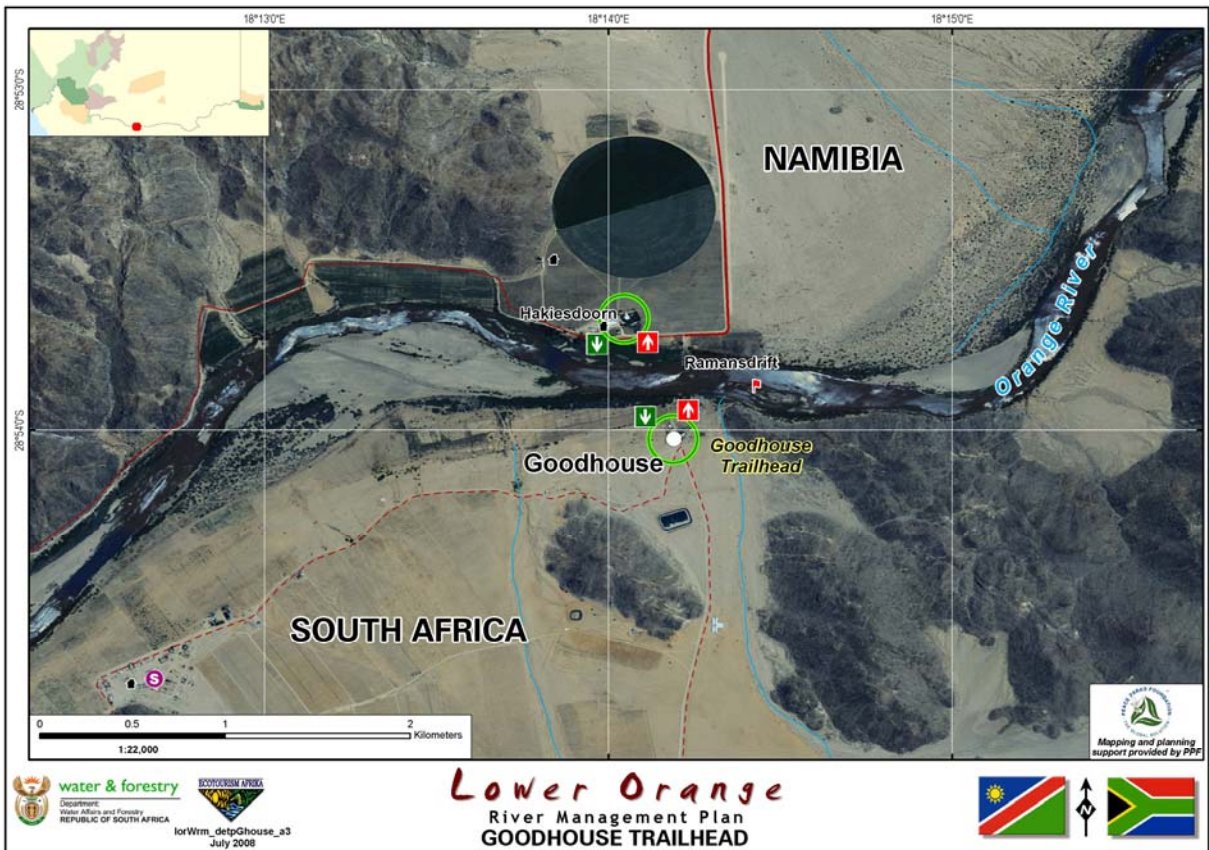
Map 77: CDP, Section 5 (Houmsrivier Trailhead)



Map 78: CDP, Section 5 (Houmsrivier Desert Camp)



Map 79: CDP, Section 5 (Grootmelkhoutboom Wilderness Camp Site)



4.3.6 River Section 6 (Goodhouse)

4.3.6.1 Integrated Concept Proposal

Due to the remoteness of this river section, few commercial companies offer this as a regular river trip. The wilderness character, as well as the date plantations along this river section, however, make it ideal for 4 day river trips focusing initially on the production and history of dates in southern Africa, and then on wilderness and man’s attempts to tame this.

It is recommended that the trailhead be established at Goodhouse, linked to the previous river section, and that stopover sites be arranged at Henkries, allowing for visits to the date farms; Kromrivier; and Matjiesrivier, with the take-out at the second siphon approximately 3km upstream from Violsdrift. This take-out should serve as the put-in point for the Violsdrift river section, and should thus be developed as a trailhead.

To enhance the debriefing of guests, and manage the conclusion to this river trip it is essential that the trip ends well before the Violsdrift/Noordoewer Bridge, thus avoiding the negative impact of development, agriculture and traffic, and preserving privacy, exclusivity and the sense of isolation normally associated with wilderness areas and experiences. By concluding the river trip in this way it is possible to psychologically end the experience prior to entering “civilisation”, and when entering, to do this as part of the shuttle service provided.

Most of this river trip is within Plot 226, proposed as an extension to NNR, a proposal that will significantly contribute to attaining national conservation targets pertaining to the vegetation of the region. (Refer Figure 23.)

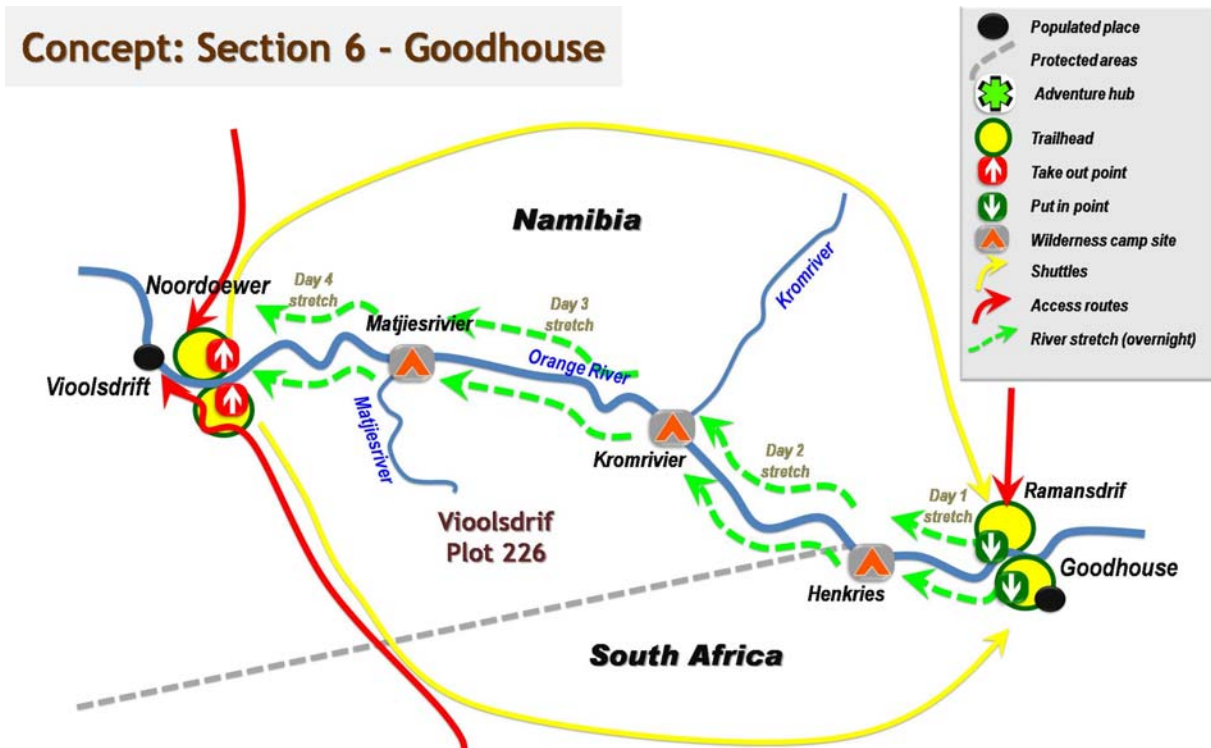


Figure 23: Integrated Concept Proposal, Section 6 (Goodhouse)

4.3.6.2 *Sensitivities*

The totally transformed riparian landscapes that characterise the Goodhouse and Vioolsdrift sections of this river, sharply contrast with the pristine river section close to the Kromrivier, which is fringed by sections with low impacts, mainly from livestock farming, farm settlements and irrigation farming.

Despite the complex mountainous landscape the gradient of this river section is low, resulting in this river section being characterised by pools, and pools separated by ripples. A few bits have sandy pools or show braided characteristics, yet this is not dominant.

Beside the overnight campsite proposed for Henkries, the other overnight camps should be based of wilderness principles aimed at enhancing the character of these sections. The unprotected status of these high value habitats should be addressed by seeking formal protection status both in South Africa and Namibia.

Due to the remoteness of this river section, and difficulty associated with rescue in the event of accident or injury, it is essential that good records are kept of all visitors on the river, whether guided or self-guided. Ideally this should be a four day guided trip within a protected area, jointly managed between the two countries, with controlled access, interpretation and operation.

Undertaken in this way tourism development can significantly contribute to ecological objectives in an environment that would be difficult to use sustainably in any other way, while also providing opportunity to interpret agriculture use of the landscape at Henkries, one of the region's leading date producing areas.

Once again this river section should be planned as a concession, with direct benefit to the contributing landowners, yet providing clear guidelines regarding overnight stops and interpretation points, and by providing a trailhead at Goodhouse, provide opportunity for community benefits in the region.

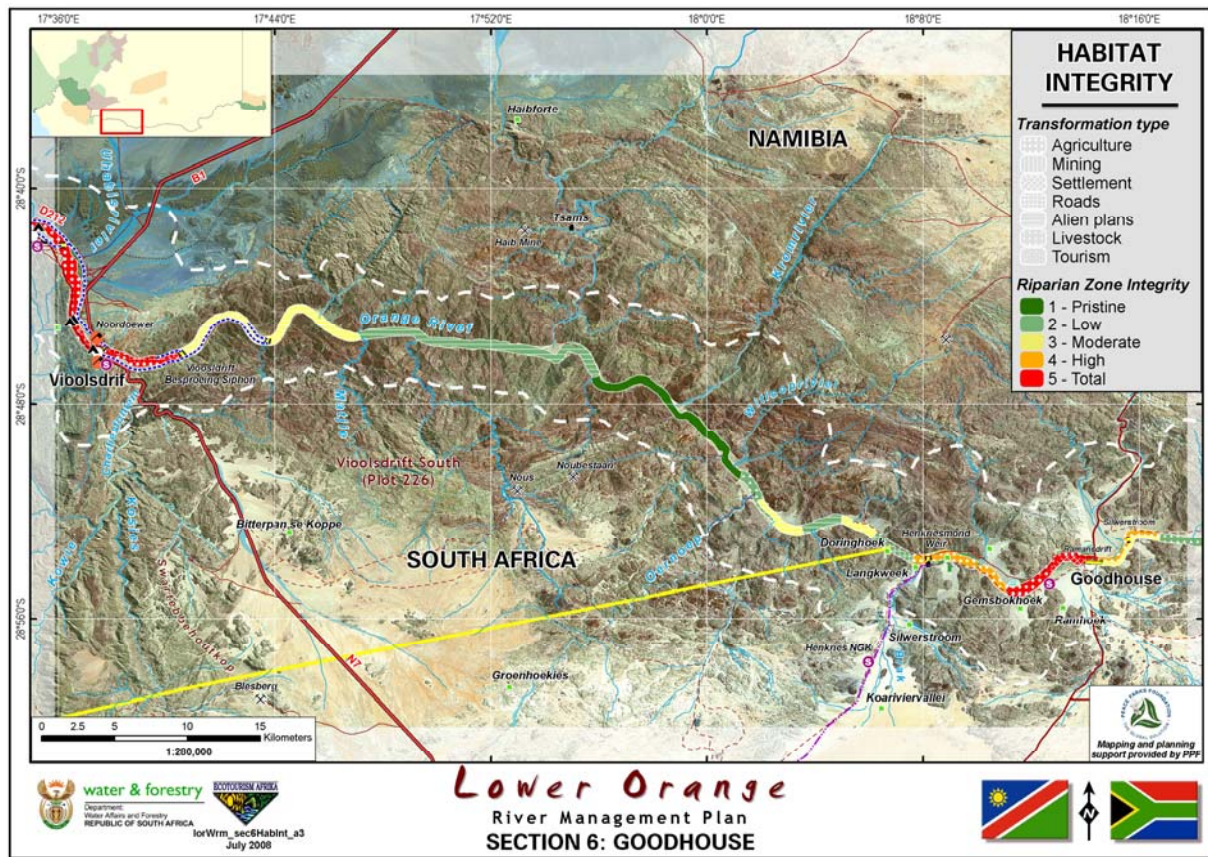
By 2015 it is envisaged that the dam proposed as a critical intervention required to effectively manage the Ramsar site at the Orange River Mouth will be completed, changing the character of this river section substantially. As part of the mitigation it is proposed that infrastructure planned as part of this river section should be aligned with the plans for the construction of the dam and the implications concomitant with the impoundment. Permanent infrastructure should not be placed in areas that will be inundated or required for the effective management of the dam.

Additionally, the state land on either side of the river could be jointly planned, possibly as a transfrontier conservation area similar to the area around the Pongolapoort Dam that now forms the centre of a TFCA between South Africa and Swaziland, and has been identified of an international growth node.

Even though the proposed dam will have implications on the character of the area, it is possible that the dam will create opportunities for the diversification of tourism products, incorporating motorised boating activities to explore the area inundated by water. These activities would be compatible with the activities proposed for the ARTP, Sperrgebiet and Oranjemund River Sections, where the gradient of the river is low, and paddling difficult.

Training in this regard could be offered for skippers, gillies, birding guides and related camp staff, yet should only start once construction of the dam has commenced.

Until the details pertaining to the construction of the dam become clarified, this river section should be planned within its current environmental character. Any concession agreements finalised for this section, both within Namibia and South Africa should take cognisance of the possible impact that the construction of the dam will have on the sustainability, viability and feasibility of this river operation. (Refer Map 81.)



Map 81: Habitat Integrity, Section 6 (Goodhouse)

4.3.6.3 CDP

Being a rather remote relatively flat river section, it is recommended that this river section be developed and utilised as a four day river trip, spending three nights on the river, starting at Goodhouse from either the Namibian or South African side, yet the operational hubs for this river section should be at either Vioolsdrif or Noordoewer, closet to the main route and existing infrastructure, and should target the existing market that utilises either of these settlements as a base from which to start.

The product should firstly entail a briefing regarding the area, its history and development, with specific focus on the role of roads in regional growth and development, highlighting the current role of the road and its role on the settlements of Vioolsdrif and Noordoewer, and then the history of Goodhouse and its role as main route prior to the bridge between Nooroewer and Vioolsdrif being constructed. The historical places along the old route and the pont at Goodhouse should be discussed prior to embarking on the river trip. (Refer Map 82.)

Once on the river the interpretation should focus on man’s attempts at farming this wild, inhospitable area, and the history of date farming should be emphasised. At Henkries a visit should be done to the date plantations, production and packing plants. The camp at Henkries (refer Map 83) could be developed close to this plantation, along the river creating the feeling of an oasis in the desert, and can include permanent infrastructure since there is a level of transformation.

The other two overnight stops should be utilised as wilderness style camps – Kromrivier and Matjiesrivier – with permanent infrastructure allowed. This will protect and enhance the environmental character even though the area is not formally proclaimed, nor protected. Similar to the proposed inclusion of most of the area on the South African side into a provincial protected area (Plot 226), the possibility of formally protecting the Namibian side should be investigated. Due to the rugged terrain, few other viable land use options exist, yet as a protected area, additional aspects, besides the ecotourism potential of the river can be investigated.

The distances on the river are 13.5km for the first day, allowing time for shuttling, orientation, safety briefings, and a visit to the date plantation; while the second day entails a 20km paddle from Henkries to the Kromrivier wilderness camp site (refer Map 84). The third day covers a distance of 22km, ending at Matjiesrivier, also a wilderness style overnight camp site (refer Map 85). The fourth day entails a moderate paddle of 15km ending at the trailhead at Vioolsdrift Syphon 2 (refer Map 86). These trailheads will enable sufficient debriefing of guests before shuttling them back to their respective starting points.

Below Table 6 summarises the distances of the four day river safari, on either side of the river.

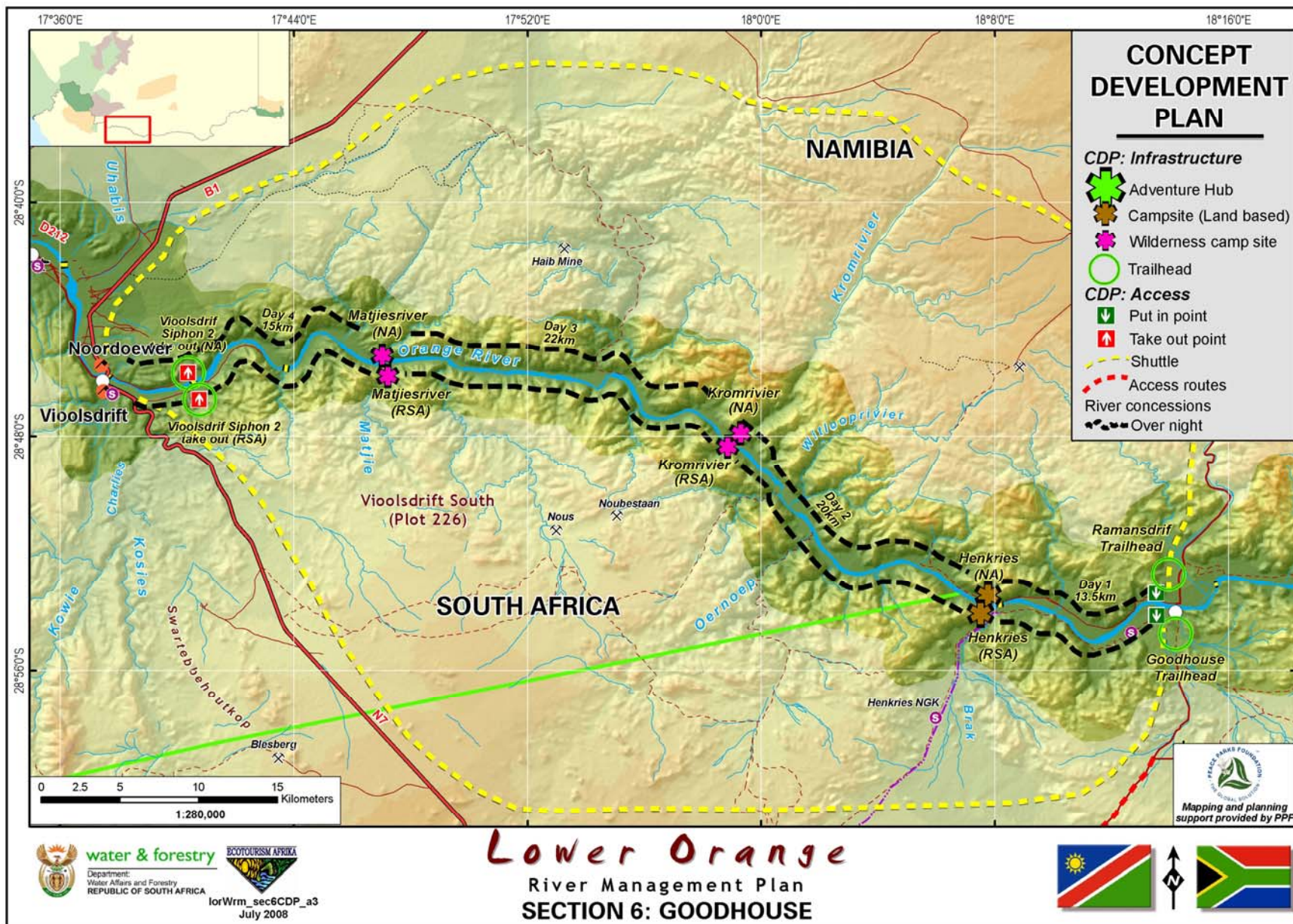
Table 6: River Distances, Section 6 (Goodhouse)

Section	Product	Activity	From	To	Km	Total distance
6	a. Four day river safari	Rafting	Goodhouse	Henkries	13.50	70.50
			Henkries	Kromrivier	20.00	
			Kromrivier	Matjiesrivier	22.00	
			Matjiesrivier	Vioolsdrift siphon 2	15.00	

4.3.6.4 Requisite Actions

The following actions are required to ensure that the CDP for this river section can be achieved:

- Discussions with the PWC regarding clarity pertaining to the proposed Vioolsdrift dam
- Discussions with the PWC and relevant conservation authorities regarding the potential establishment of a transfrontier conservation area associated with the proposed Vioolsdrift Dam, based on the state land either side of the river;
- Discussions with the respective landowners regarding access to and use of land for the requisite developments e.g. River camp at Henkries, guided tour of date plantation, trailheads etc.;
- Packaging of these river sections as individual concessions; and,
- Conclude a revenue sharing agreement with the relevant property owners.



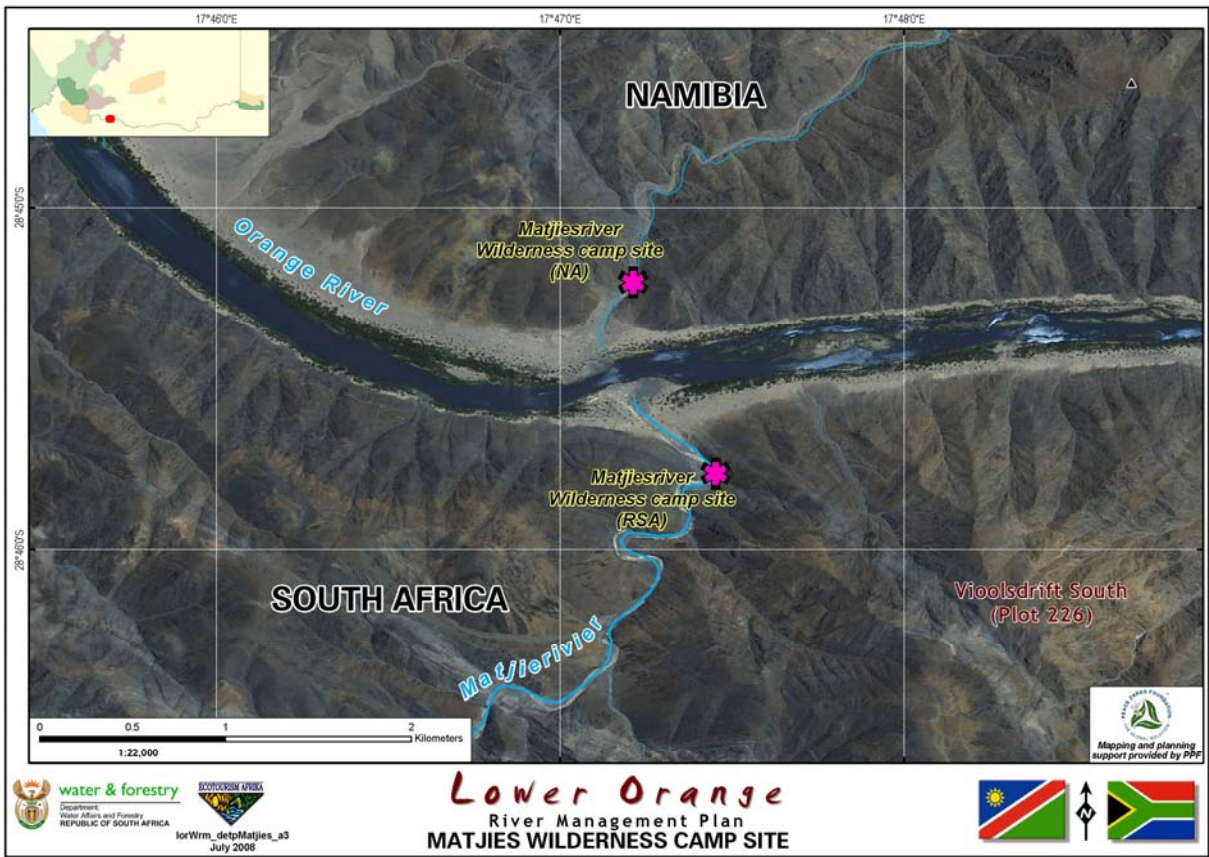
Map 82: CDP, Section 6 (Goodhouse)



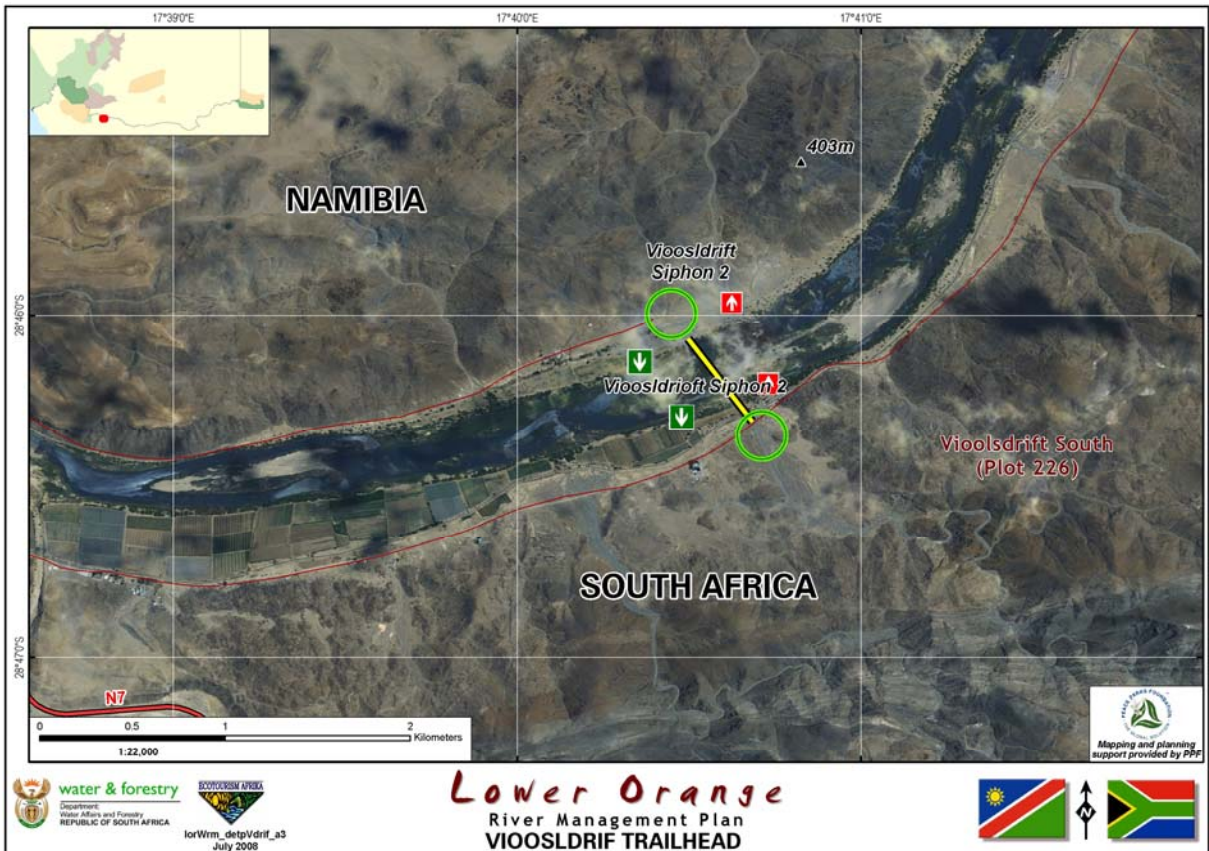
Map 83: CDP, Section 6 (Henkries River Camps)



Map 84: CDP, Section 6 (Kromrivier Wilderness Camp Site)



Map 85: CDP, Section 6 (Matjies Wilderness Camp Site)



Map 86: CDP, Section 6 (Violsdrif Trailhead)

4.3.7 River Section 7 (Violsdrift)

4.3.7.1 Integrated Concept Proposal

Numerous campsites, targeting traffic off the N7/B1 main route, utilise these section of the river for recreational paddling, half day trips, and as the start for multi day river trips. As providers of accommodation these establishments benefit substantially from the river, yet these benefits are not shared with other landowners or resource managers.

Due to the popularity of this river section, and the high levels of utilisation and transformation, it is recommended that this river section, from the bridge to the start of NNR (Swissroll Rapid) be managed as an open-river section, with minimum need for permits and control measures other than the minimum standards required by the industry regarding safety standards.

Morning and afternoon trips can be offered from most of the campsites, as well as shorter trips out of these campsites. These trips can be guided or self-guided. (Refer Figure 24.)

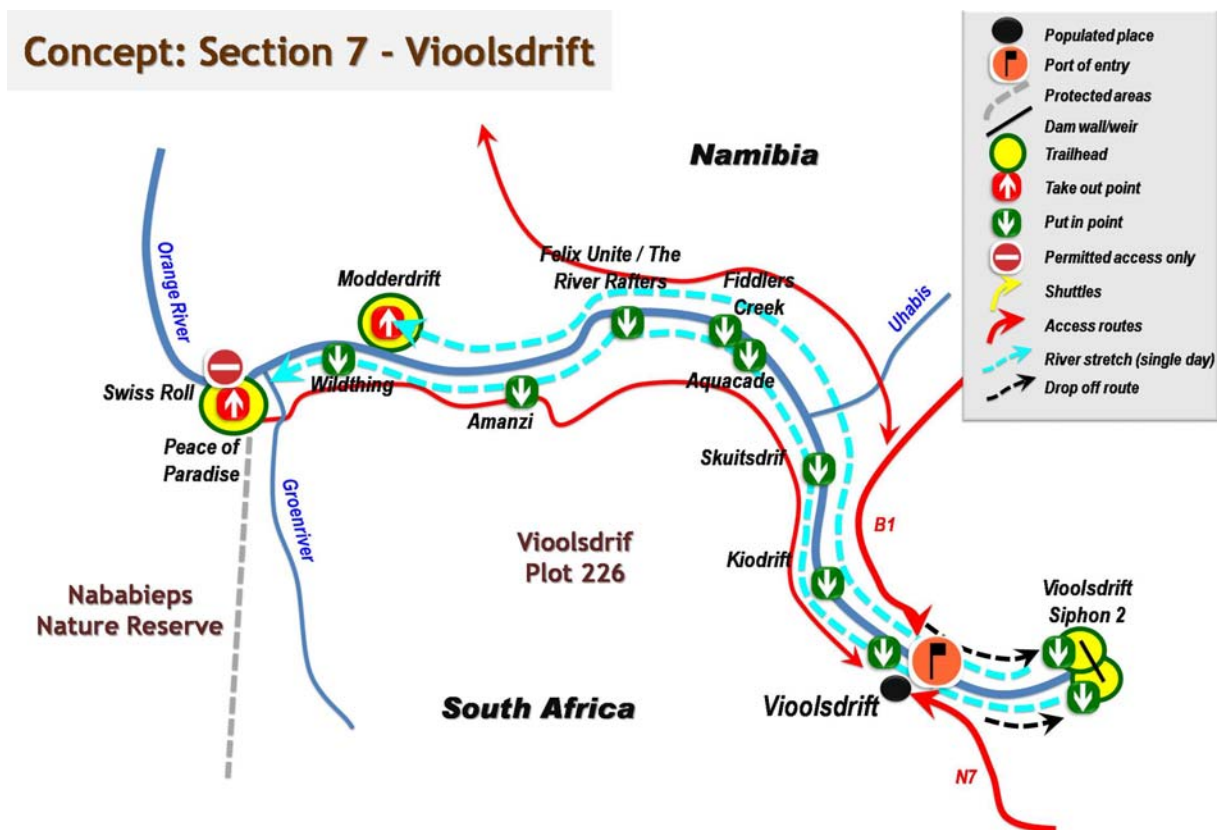
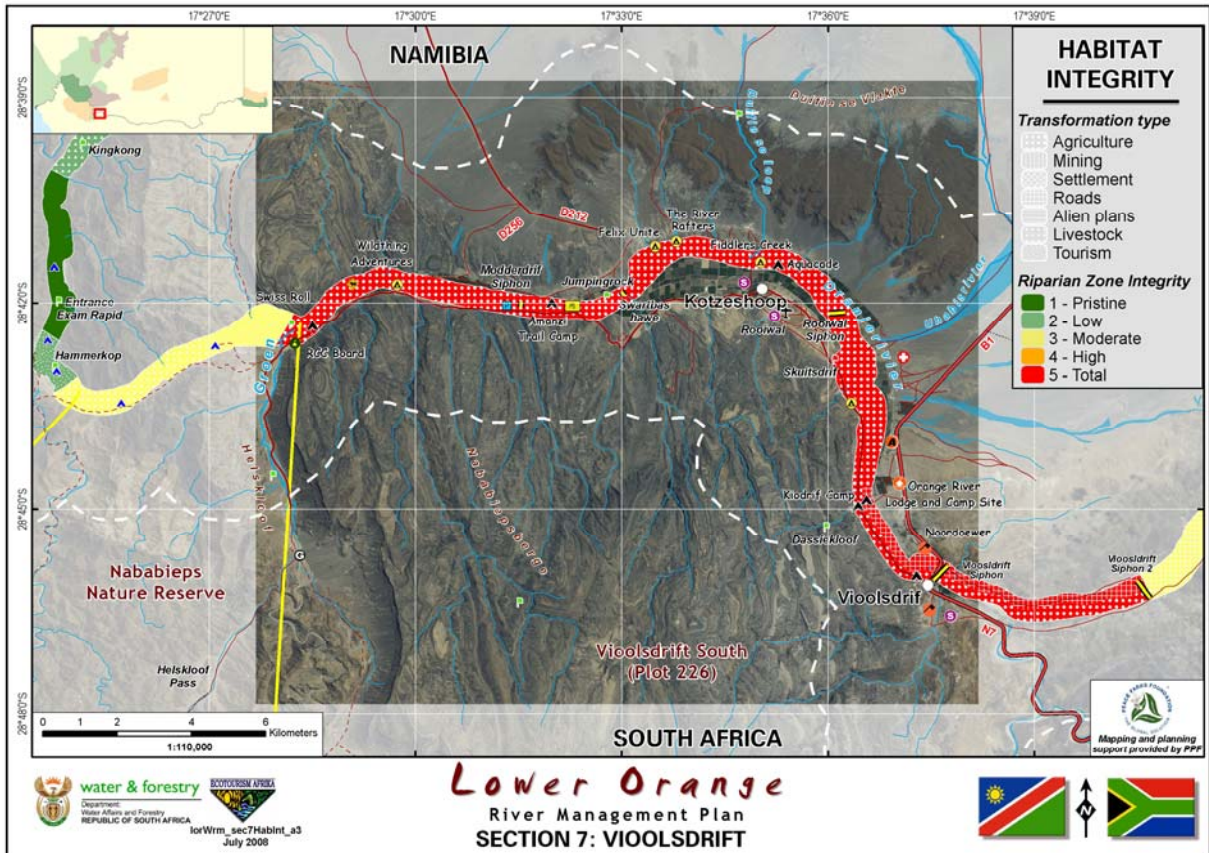


Figure 24: Integrated Concept Proposal, Section 7 (Violsdrift)

4.3.7.2 Sensitivities

Due to the total transformation of this river section as a result of irrigation farming, and the infrastructure required to support this form of agriculture very little environmental sensitivity exists. However sensitivities do exist regarding uncontrolled access to the properties and farms. This can only be overcome by having a river register with strict adherence to the requirements. (Refer Map 87.)



Map 87: Habitat Integrity, Section 7 (Violsdrift)

4.3.7.3 CDP

Historically, this section of the river served as the start for the most utilised section of the river, the Richtersveld Section. However, the popularity of the trips and the volumes experienced over peak periods has necessitated a re-planning of the role that this river section plays. The lack of benefits to the Northern Cape DTEC, and the Richtersveld Community, World Heritage Site Authority, and SANParks, as well as uncontrolled access to these areas, together with the requests from the APA members for better control of the industry’s use of this high value river section, culminated in this concept for the Violsdrift section of the river in relation to the Richtersveld section.

Conceptually this section of the river will be managed as an open section, without any specific concession opportunities, with the only restrictions being that all guest access to the river be recorded, albeit from the individual camps along the river, or from the trailheads at the Violsdrift Syphon 2. To provide additional support to the controlling of the border it is recommended that guests are restricted to the shore of the country of origin and that the principle of “country of entrance, country of exit” be enforced. To assist in this it is advised that each country develops trailheads to serve as put-in points, and as take-out points.

On the Namibian side the put-in point should be located at Violsdrift Syphon 2, linked to the previous river section’s take-out point. The take-out point for this section should be at Modderdrift since this is very last

accessible point before entering the controlled access area for the Richtersveld section of the river. This provides a total river distance of 24km from put-in to take-out point. A distance that should suffice for half and full day trips for the existing commercial operators.

Mirrored on the South African side, the Vioolsdrift Syphon 2 trailhead would serve as put-in point, however, the take-out point would be at Peace-of-Paradise, the boundary of the NNR. This would enable 28km of paddling for these guests. Once again this should suffice for half and full day trips for operators on this side of the river. Operators along this section of the river should agree to a standard for allowing access, vessels, guiding, interpretation etc. No access to the properties should be allowed. (Refer Map 88.) Below Table 7 summarises the full day distances of Namibia and South Africa:

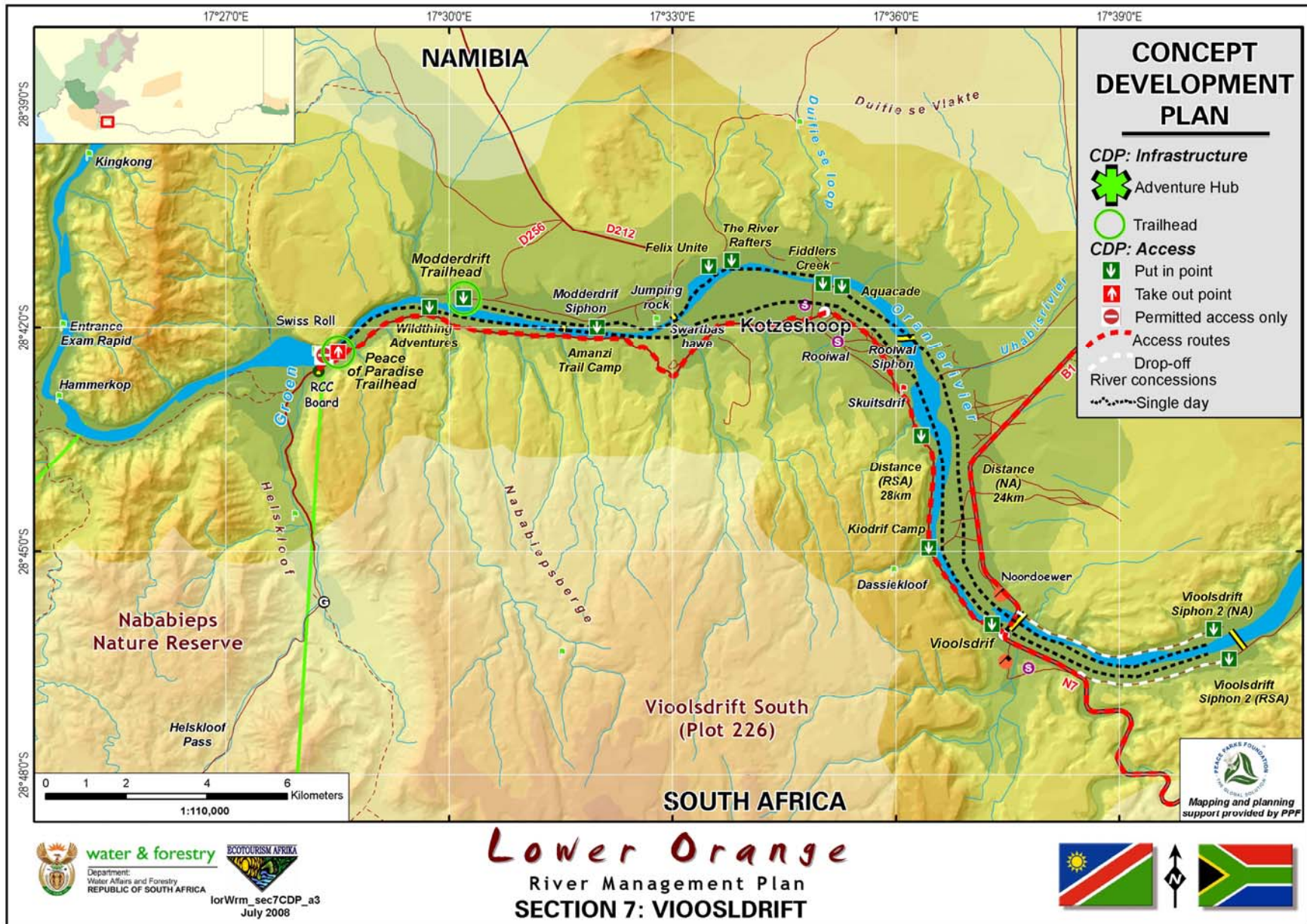
Table 7: River Distances, Section 7 (Vioolsdrift)

Section	Product	Activity	From	To	Km	Total distance
7	a. Day paddles (NAM)	Rafting	Vioolsdrift Siphon 2	Nuwe Modderdrift	24.00	24.00
	b. Day paddles (SA)		Vioolsdrift Siphon 2	Swiss Roll	28.00	28.00

4.3.7.4 Requisite Actions

The following actions are required to ensure that the CDP for this river section can be achieved:

- Develop a river access record keeping system;
- Develop a standard for river use for this section of the river;
- Negotiate and develop trailheads at respective places; and,
- Conclude a revenue sharing agreement with the relevant property owners.



Map 88: CDP, Section 7 (Vioolsdrift)

4.3.8 River Section 8 (Richtersveld WHS)

4.3.8.1 Integrated Concept Proposal

As custodians of resources deemed internationally significant, the Richtersveld Community as resource manager, together with DTEC as the manager of the NNR, currently receive no benefit from the use of the river section from Swissroll Rapid to Aussenkehr.

Four protected areas are included in this river section; NNR; the Richtersveld WHS (Cultural Landscape); Richtersveld National Park (RNP); and ANP, which highlight the importance of this section of the river from a conservation perspective. As the section that is currently most utilised, this section of the river is economically very important to the river industry, yet it faces the most challenges, environmentally, operationally, and practically.

It is recommended that this section be used by a limited number of concessionaires, each focusing on a different sector within the market. It is envisaged that this differentiation will enable a broadening of the market, but also enable control over demand by limiting supply. Current utilisation patterns show peaks associated with holidays and long weekends, with huge numbers of users, often exceeding carrying capacities and environmental thresholds, resulting in low quality experiences and environmental degradation, as well as problems with pricing and sustainability.

Less availability over peak periods should force users to utilise alternative periods, similar to the supply policies utilised by SANParks for trails such as the Otter, and the Wilderness Trails within Kruger National Park. Limiting supply has resulted in increased demand over a longer period, enabling improved and enhanced guest experiences, as well as higher prices and increased financial sustainability.

To facilitate border control issues it is recommended that these multi day trips be offered only from the Namibian side since the logistical support, re-supply points, emergency exits and take-out points are all on the Namibian side. Shorter trips (2 days) can be offered from Noordoewer to Sjambok Rapid, while longer trips, 3-4 days depending on vessels and river flow levels, can be offered from Noordoewer to Klipneus Island at the start of the Aussenkehr farms.

Due to the presence of a track along the middle section of this river section, from Sjambok Rapid to Rudi's/Seven Pillars Mine, limited logistical support can be provided, yet ideally this section should mainly provide wilderness style camping along the river. To enable better control it is recommended that predetermined campsites be identified and allocated to individual concessionaires, who will be responsible for maintaining these sites, removing all waste, and minimising environmental impacts associated with camping such as firewood collection.

Emphasis should be placed on interpretation of the region's rich natural and cultural heritage, evident from the high level of protection status within this section of the river, as well as the river and its associated ecosystem.

Trailheads should be established at Modderdrift in Noordoewer, close to the sandstone cliffs, and close to Klipneus Island at the start of the Aussenkehr farms, with a take-out point at the Sjambok Rapid re-supply point. The trailhead points should have ablutions, waste management facilities, as well as orientation information, while the Sjambok take-out can be more basic. These trailheads can also serve as central facilities to host the River Registers, logging all guests getting onto, and exiting this river section.

Income generated from these river concessions should contribute equitably to the conservation efforts of the agencies responsible for managing the protected areas, Nababeep, Richtersveld, Noordoewer farms, and Aussenkehr. This could be calculated as a percentage of turnover, or a fixed fee, paid by the concessionaires, and then divided according to the percentage of shoreline managed. (Refer Figure 25.)

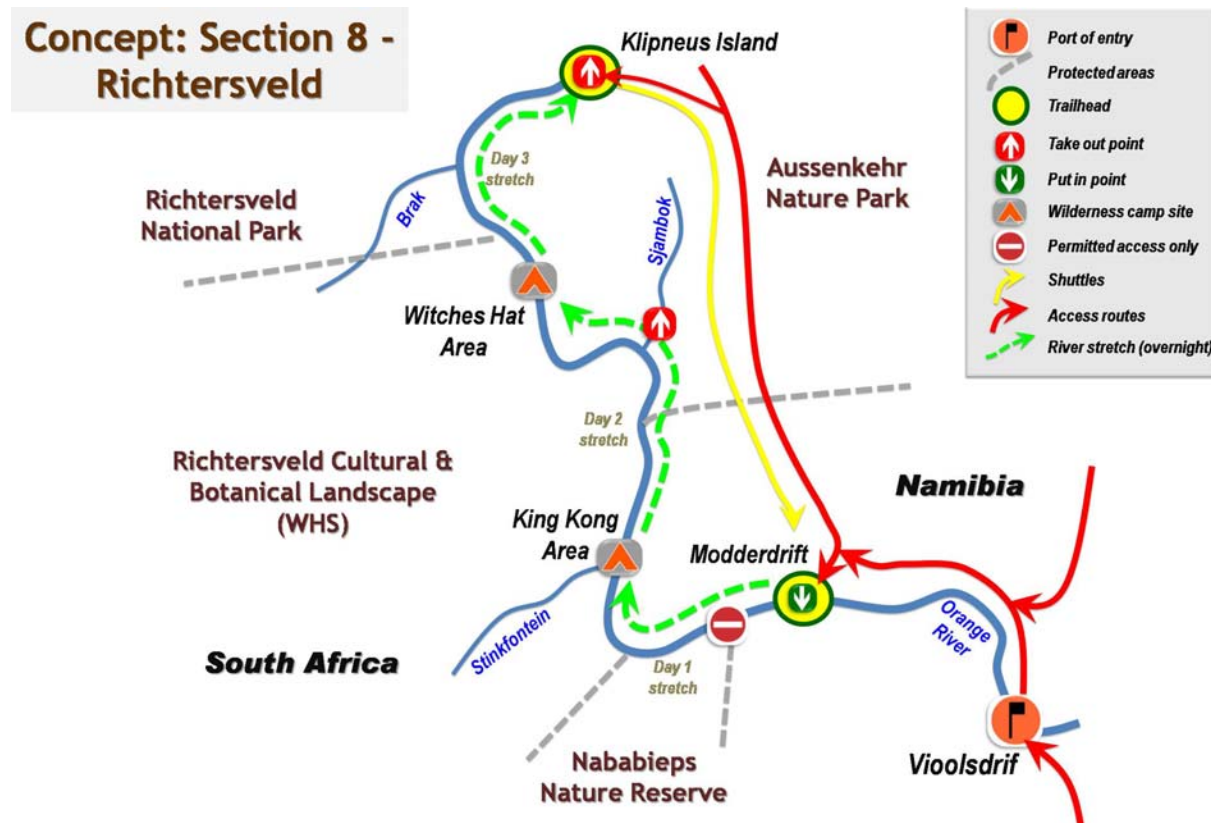


Figure 25: Integrated Concept Proposal, Section 8 (Richtersveld WHS)

4.3.8.2 Sensitivities

Despite being the most utilised river section, this section has numerous sensitivities ranging from environmental and social to economics and management. As a river section characterised by exceptional scenic beauty, a sense of wilderness, and tranquility, several aspects detract from enhancing these, and include mining, livestock farming and uncontrolled tourism access.

These detractors could be controlled since most of this river section falls within formal protected areas, inclusive of the NNR, Richtersveld WHS, RNP, and ANP. Only the small portion of land from Noordoewer to the southern boundary of the ANP is not formally proclaimed. Due to the rugged nature of this unproclaimed and unprotected land very few land use options other than ecotourism exist, yet effort should be made to formally protect this section as well.

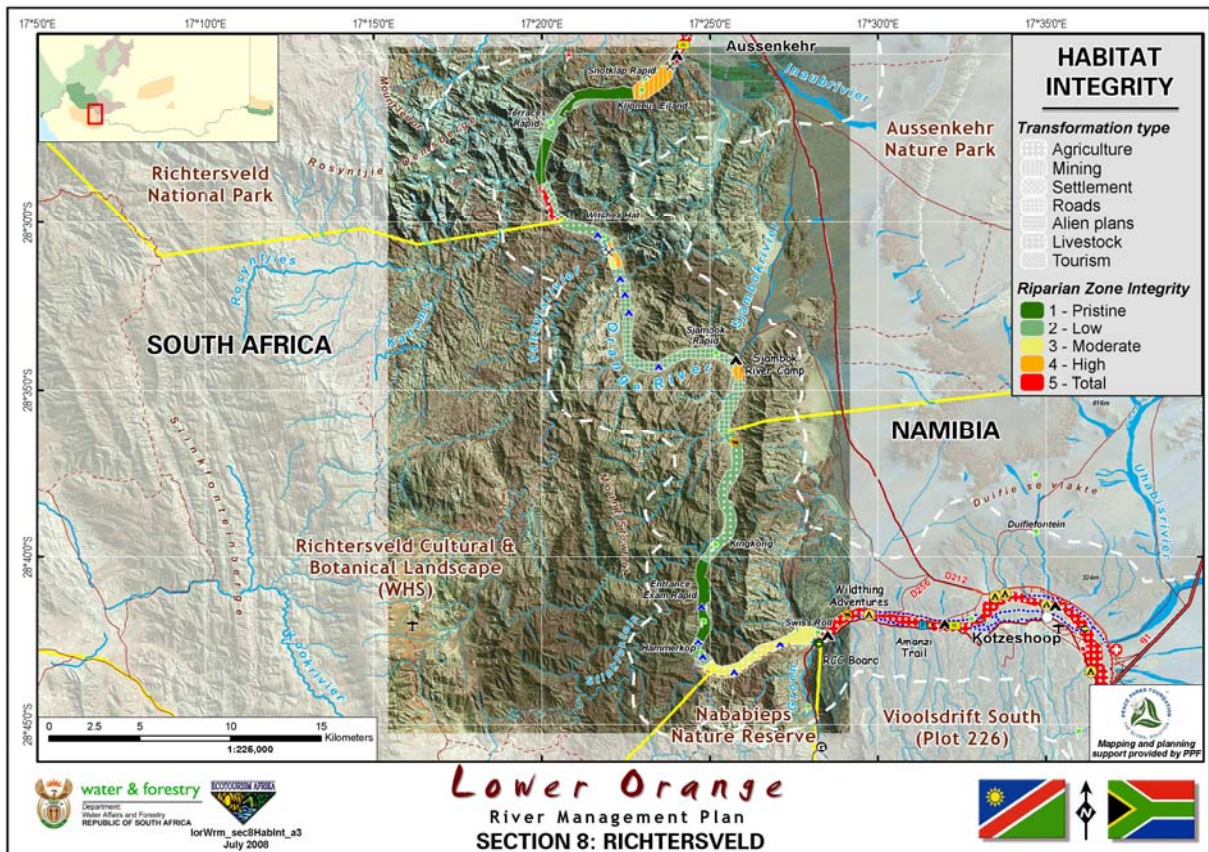
Ecologically linked, yet managerially divided, the differences in management styles and approaches between the authorities tasked with managing these individual portions of land create problems regarding aspects such as control and impact across the international boundary. These problems can be addressed by formally adapting the core area of the TFCA to include the entire area from Noordoewer to Sendelingsdrift.

Currently, the contributing landowners receive little or no benefit from the river use, other than the establishments offering access points or take-out opportunity. This has created a degree of animosity between the Richtersveld Community and operators. Additionally, difficulty associated with logistics and support on the South African side has created concerns from the police and immigration authorities. This sensitivity must be addressed, and thus it is recommended that this section of the river only be operated from the Namibian side.

Concerns have also been raised by the river industry stating that the uncontrolled access to this river section negatively impacts on the viability of business ventures, despite their willingness for control measures, fair competition and concessioning.

Most of this river section is characterised by areas that are relatively devoid of negative impacts, with only a few bits being pristine. The resupply point at Sjambok rapid, the mine and its supporting infrastructure within ANP adding the only negative impacts. Due to the protection status of the surrounding land, and the use of conservation as land use option, these impacts should be well managed.

Camping within the King Kong area should be wilderness based, while the presence of the mine and access road in the Witches Hat area could allow for limited logistic support. However, to differentiate this river section from the ARTP section, both in experience and product, it is recommended that these river trips all be wilderness style camping, rather than formally developed camps, contributing to, rather than detracting from the wilderness character of this river section. (Refer Map 89.)



Map 89: Habitat Integrity, Section 8 (Richtersveld WHS)

4.3.8.3 CDP

In an effort to address the sensitivity regarding the lack of benefits to the contributing landowners in an equitable manner it is recommended that this section be managed as a concession area, with a maximum of three operators, each targeting a distinct sector within the market. A revenue sharing agreement must be concluded between the Northern Cape DTEC; the Richtersveld CPA as owners as well as the Richtersveld World Heritage Authority and SANParks as managers; the owners of ANP; and the riparian property owners of the land between Noordewer and Aussenkehr.

To control access the use of concessioning, as well as river registers should suffice. The concessionaires will strive to ensure that only permitted and authorised guests get access to the river section, while the river register will enable verification of authorised guests, and trace the origin or access point of illegal users.

These control measures will significantly increase the viability of the concessions as commercial operations and business ventures, despite the negative impact that it could have on some current operators.

It is proposed that all the overnight stops be preselected and allocated to a specific concessionaire, who will be responsible for maintaining the integrity of the site, by removing all waste and providing appropriate facilities, such as portable toilets and showers, tables etc.

To maximise the sense of isolation it is recommended that the concessionaires develop a departure roster with the operator utilising the furthest campsite departing first, and the rest following in sequential order, thereby reducing the need to pass another group along the river. Psychologically this enhances the sense of isolation. (Refer Map 90.)

The river safari product should begin with an orientation and safety briefing at the Modderdrift Trailhead (refer Map 91), before embarking on the first day's paddle of 15.5km. During this relatively short paddle the group dynamics, fitness levels etc. can be ascertained and guests will have sufficient time to get used to the paddle and pace of the river. The overnight stop for the first day will be within the King Kong area (refer Map 92), on the Namibian side of the river, with the strategically placed so that they are not visible or audible from each other.

The second day entails a longer paddle, once again with a staggered start, via the Sjambok Rapid (refer Map 93), totalling 21km on the day, ending in the Witches Hat area (refer Map 94), with a similar layout to that of the previous overnight stop. The third day on the river will entail a 19.5km paddle to the take-out close to Klipneus Island (refer Map 95), before returning by shuttle to the starting point at Noordoewer, whichever one was used for the specific market group.

Undertaken in this way, the fears that were raised by the current operators can be addressed, access to this popular river section controlled, and the huge seasonal peaks flattened through strict control of group sizes. Environmentally, socially and psychologically this will improve the quality of the river experience, and thereby increase its viability and sustainability. Limits to group sizes and availability have been seen to be an effective management tool with several trails such as the Otter Hiking Trail retaining its popularity despite strict control of group size and availability.

Below Table 8 summarises the daily distances for the three day river safari:

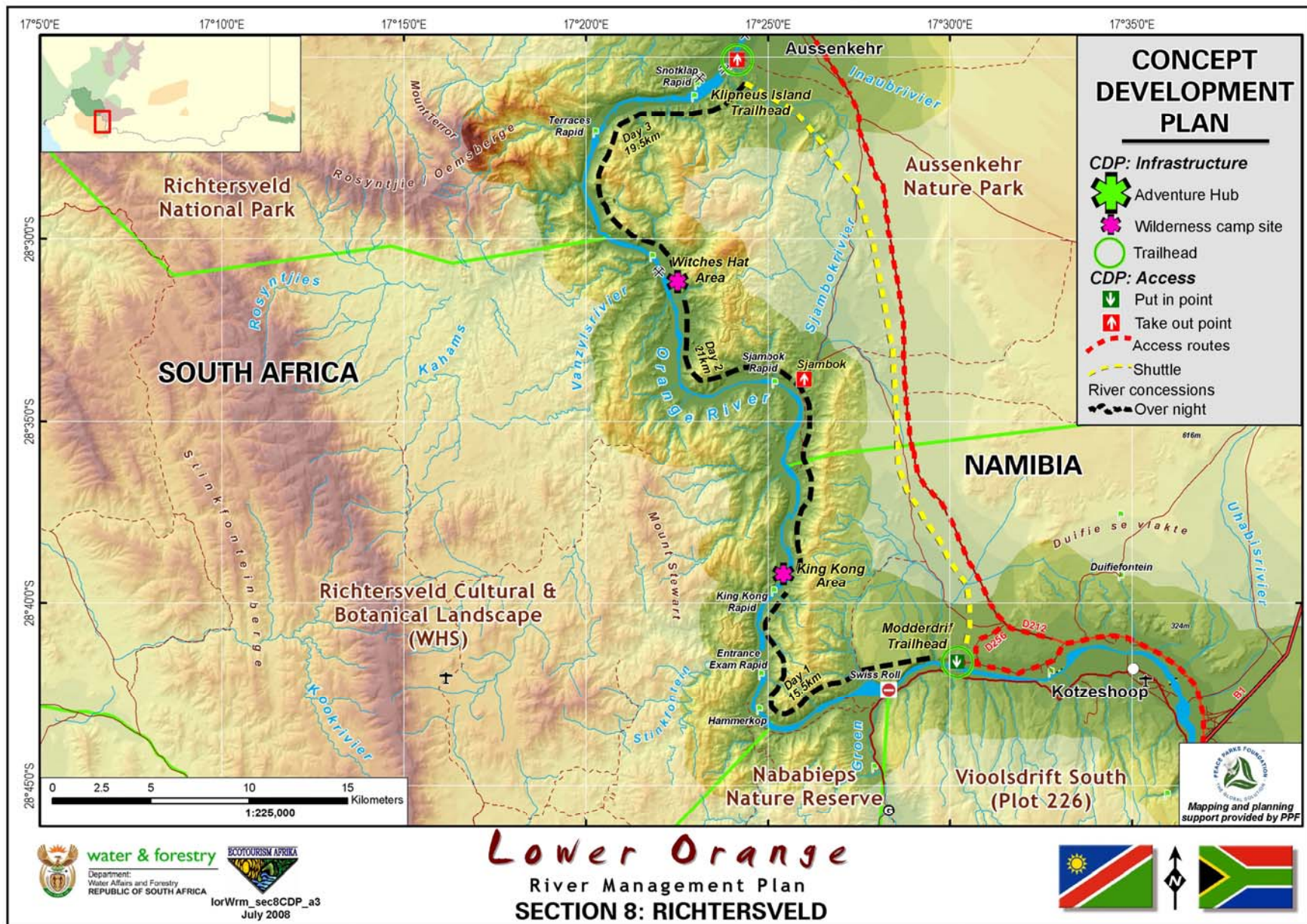
Table 8: River Distances, Section 8 (Richtersveld WHS)

Section	Product	Activity	From	To	Km	Total distance
8	a. Three day river safari		Modderdrift	King Kong	15.50	56.00
			King Kong	Witches Hat Area	21.00	
			Witches Hat Area	Klipneus Island	19.50	

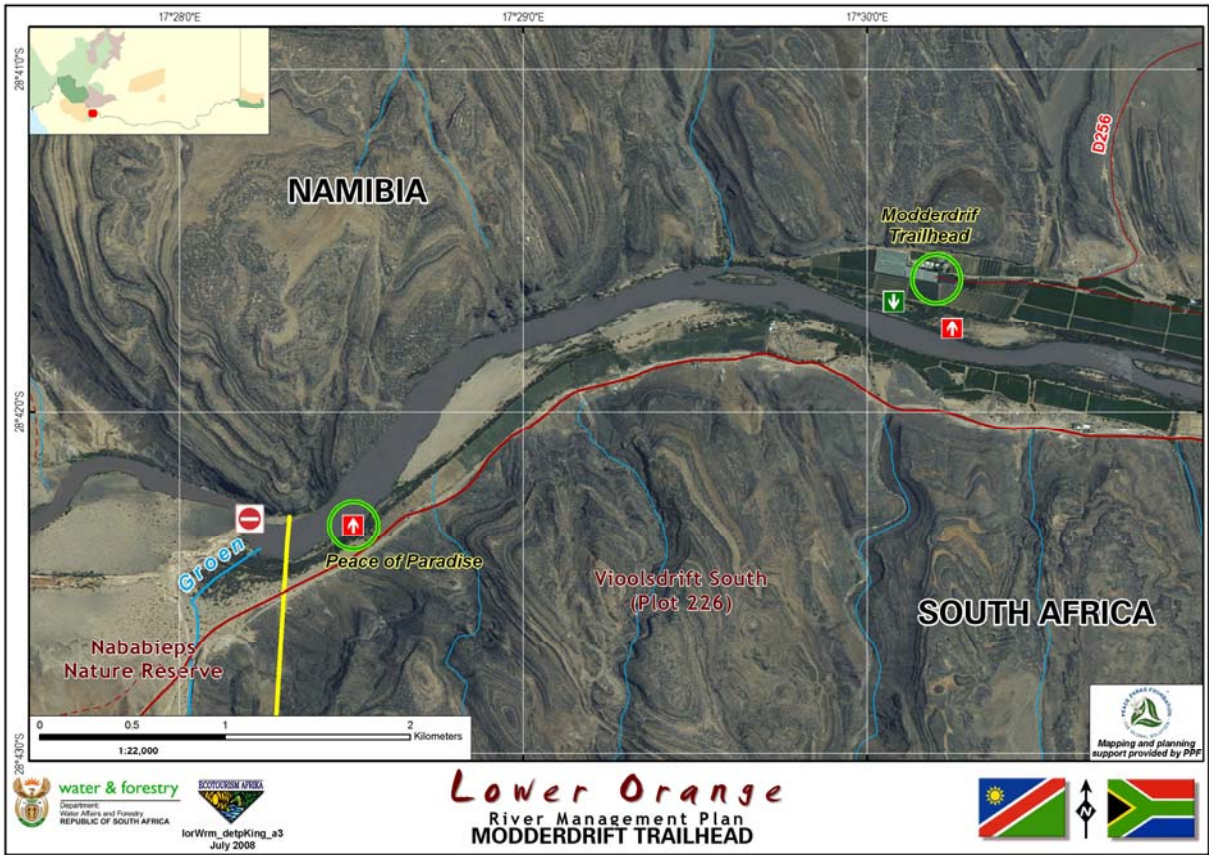
4.3.8.4 Requisite Actions

The following actions are required to ensure that the CDP for this river section can be achieved:

- Discussions with the respective landowners regarding access to and use of land for the requisite developments e.g. trailhead at Modderdrift; Klipneus Island; wilderness camp sites etc.;
- Ensure that access beyond Peace-of-Paradise is restricted;
- Packaging of this river section as three individual concessions; and,
- Conclude a revenue sharing agreement with the relevant property owners.



Map 90: CDP, Section 8 (Richtersveld WHS)



Map 91: CDP, Section 8 (Modderdrift Trailhead)



Map 92: CDP, Section 8 (King Kong Wilderness Camp Site)



Map 93: CDP, Section 8 (Sjambok Emergency Take Out)



Map 94: CDP, Section 8 (Witches Hat Area Wilderness Camp Site)



Map 95: CDP, Section 8 (Klipneus Island Trailhead)

4.3.9 River Section 9 (Aussenkehr)

4.3.9.1 Integrated Concept Proposal

Even though this river section is heavily impacted on by agricultural, mining and settlement activities, the section can be used, albeit limited, for single day river trips, or as a connection between the high value areas of the Richtersveld and ARTP. The Trailhead at Klipneus Island, which serves as the take-out for the Richtersveld section of the river, should serve as the put-in for this section, allowing the entire section to be available for use, yet restricted from accessing beyond Gamkab Gate.

Currently, three different camps utilise this section of the river, and as the region diversifies its agricultural base to include tourism products, increased pressure will be on the river to support this diversification of income streams.

An agreement must be concluded with the relevant landowner for securing the access at Klipneus Island, the site for the trailhead for this section of the river. (Refer Figure 26.)

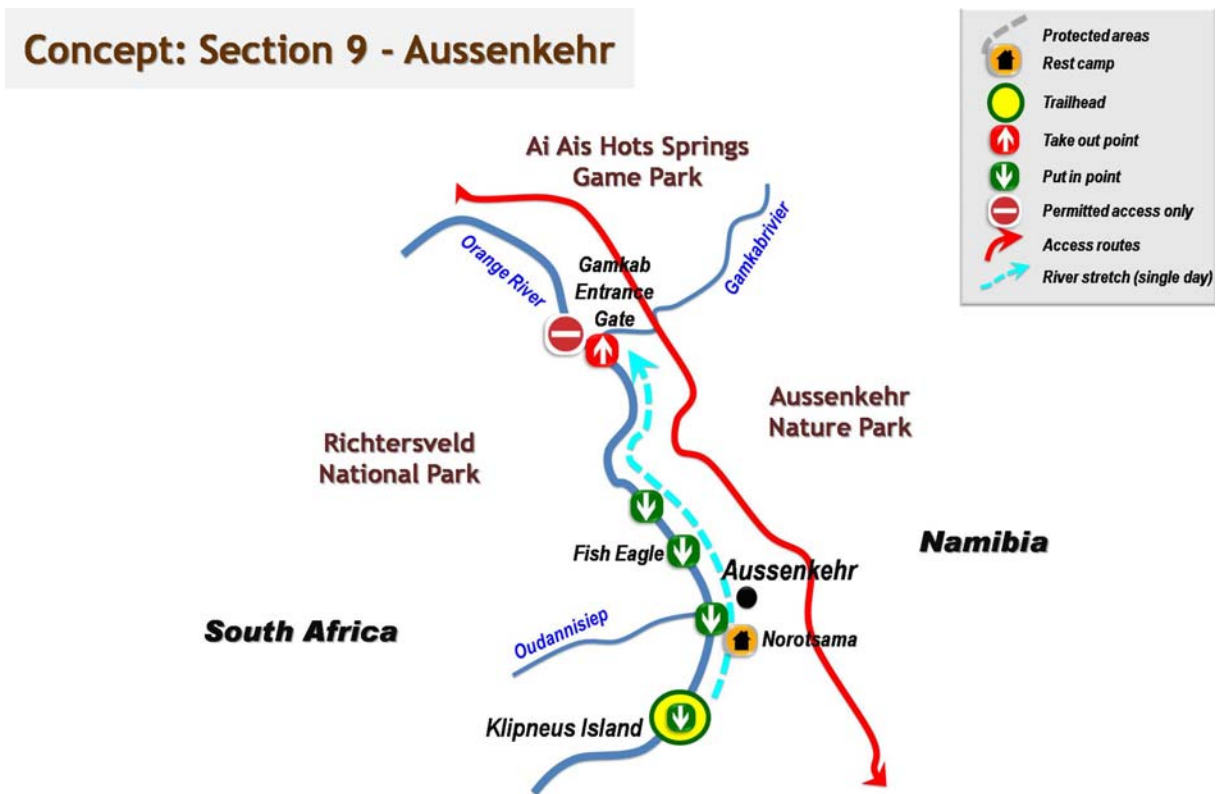


Figure 26: Integrated Concept Proposal, Section 9 (Aussenkehr)

4.3.9.2 Sensitivities

Similar to the Riemvasmaak and Vioolsdrift sections of the river, this section is characterised by a moderate to totally transformed riparian habitat mainly as a result of mining, agriculture, livestock and settlement impacts. Offering a wide variety of river landscapes including absolute xeric pools, pools and ripples, rocky, and braided, this river section can be used to accommodate guests of the various campsites and lodges in the area.

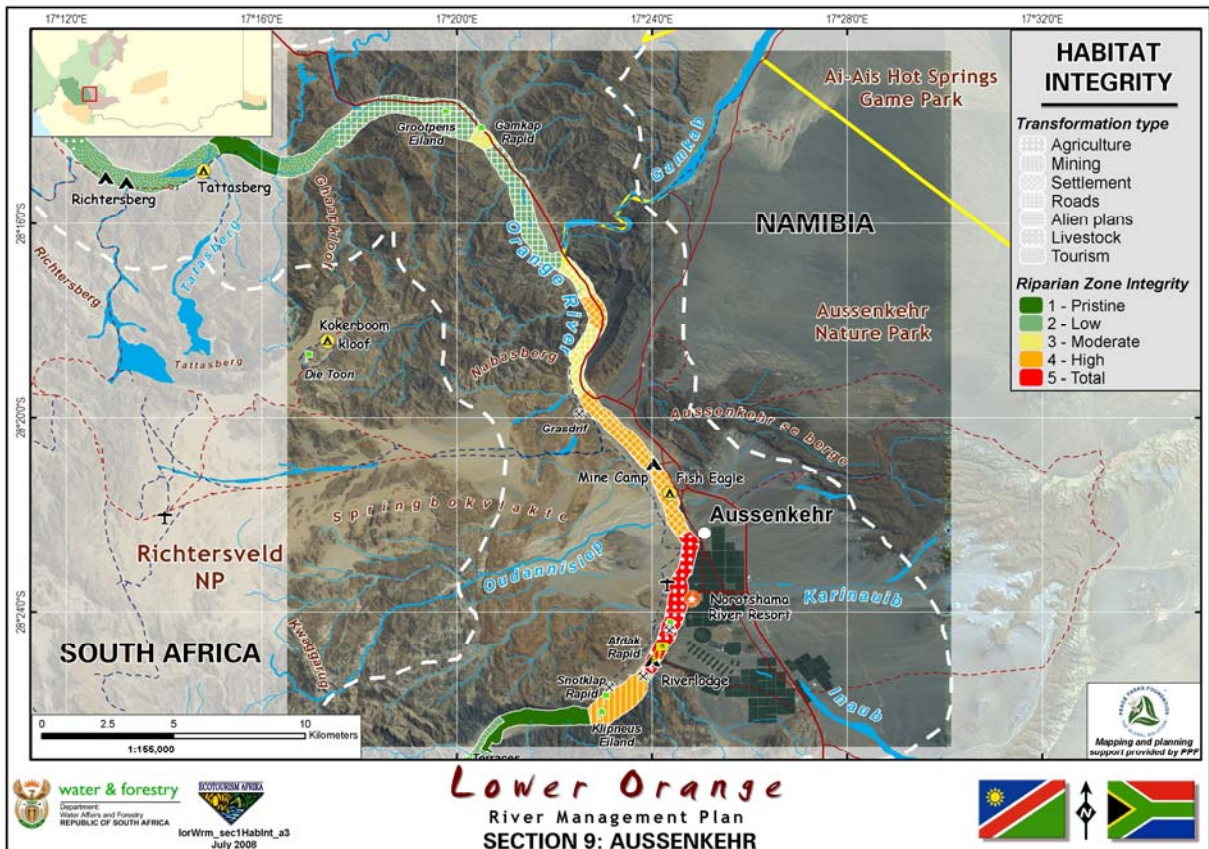
It is proposed that a trailhead be established at the point furthest upstream within this section accessible by road. In this way the maximum length of the river and the maximum diversity within this section can be utilised. This would require an access and development agreement with the relevant landowner.

Due to the current benefits attained by Norotsama Lodge, which serves as the current take-out point for many of the river trips, sensitivities could be experienced, regarding the proposed change to the ending of the previous section and the change in role that the Aussenkehr section would play.

Additionally, it will be necessary to address the benefit to the Richtersveld Community, since they currently do not access the river in this section, yet do impact on, have a responsibility to manage the shoreline and surrounding area. As for the other sections a percentage split should suffice.

Water quality aspects are a concern, with potential sources of pollution coming from agriculture and settlement. Water quality concerns must be addressed and monitored to ensure that perceptions regarding these concerns are positive rather than negative.

Despite the transformation levels within this portion of the river, the role of water, irrigation and farming within deserts and regional growth must be included in the interpretative material provided to users. This material can be developed in association with the Aussenkehr farms, as well as the Departments of Water Affairs and Agriculture. (Refer Map 96.)



Map 96: Habitat Integrity, Section 9 (Aussenkehr)

4.3.9.3 CDP

As a highly impacted section of the river, the Aussenkehr section will not be able attract guests as a stand alone destination. It is envisaged that this area will be able to accommodate users from the various camps along this section of the river, and expand their options by utilising the Klipneus Island Trailhead as a put-in point and the Gamkab Gate as a take-out point. This would enable half and full day trips totalling 17.5km of paddling, including several rapids. Similar to the Violsdrift section, this river section should be managed as an open river section, only requiring a river register to be completed, logging the point of access and exit. Safety standards must be similar to that agreed to at Violsdrift. (Refer Maps 97 and 98.)

Below Table 9 summarises the distance for this river section:

Table 9: River Distances, Section 9 (Aussenkehr)

Section	Product	Activity	From	To	Km	Total distance
9	a. Day paddles (NAM)	Rafting	Klipneus Island	Gamkab Gate	17.50	17.50

4.3.9.4 Requisite Actions

The following actions are required to ensure that the CDP for this river section can be achieved:

- Develop a river access record keeping system;
- Develop a standard for river use for this section of the river;
- Negotiate and develop trailheads at respective places; and,
- Conclude a revenue sharing agreement with the relevant property owners.



Map 97: CDP, Section 9 (Aussenkehr)



Map 98: CDP, Section 9 (Klipneus Island Trailhead)

4.3.10 River Section 10 (ARTP)

4.3.10.1 Integrated Concept Proposal

Similar to the Riemvasmaak section of the river, this river section has exceptional access, due to the presence of the main road from Noordoewer to Rosh Pinah. Rather than negatively impact on the river experience, the presence of this road allows for product differentiation, by allowing camps to be serviced, rather than transporting all requisite equipment along with the guests, slowing progress significantly.

Three distinct products are suggested, the first being traditional or classic river trips, the second being a luxury river safari, a safari which utilises lodges along the river, rather than the traditional campsites, and the third fishing charters, providing motorised access to the river for fishing and birding.

It is recommended that an Adventure Hub be developed close to Gamkab gate, consisting of a lodge, self catering chalets, and campsites, as well as facilities for storing, servicing and maintaining rafts, canoes and kayaks.

Facilities for the river camps (refer Figure 27) should be developed at the confluence of the Fish and Orange rivers, as well as at Koukams Island, downstream of Oena Mine, yet should be minimal, enhance rather than detract from the camping experience, and utilise local materials and designs.

Facilities for the luxury river safaris (refer Figure 28) should be developed at Tattasberg; Bo-Plaats and at Nuab. It is recommended that these lodges be based on the local vernacular architecture, similar to that of Tattasberg in the Richtersveld National Park.

For the Fishing Charter Camp (refer Figure 29), it is recommended that the camp be developed at Nuab, close to that of the luxury river camp. This approach will minimise impacts, allow for shared facilities and management, and thereby increase efficiency.

Besides targeting guests from the Gamkab Adventure Hub, guests can also be sourced from Sendelingsdrift, yet this would require guests to cross to Namibia on the Pont, prior to being shuttled to the various put-in points/trailheads along this section of the river. To facilitate access, reduce conflict, and co-ordinate guest activities, it is recommended that only one concessionaire be responsible for all activities.

Undertaken in this way, numerous river trips, of varying lengths, styles and duration can be offered to guests. Recognising the trend for 3 day adventures within the tourism industry, this river section allows for a range of river trips ranging from half day to four day in length.

Concept: Section 10 - ARTP River Camps

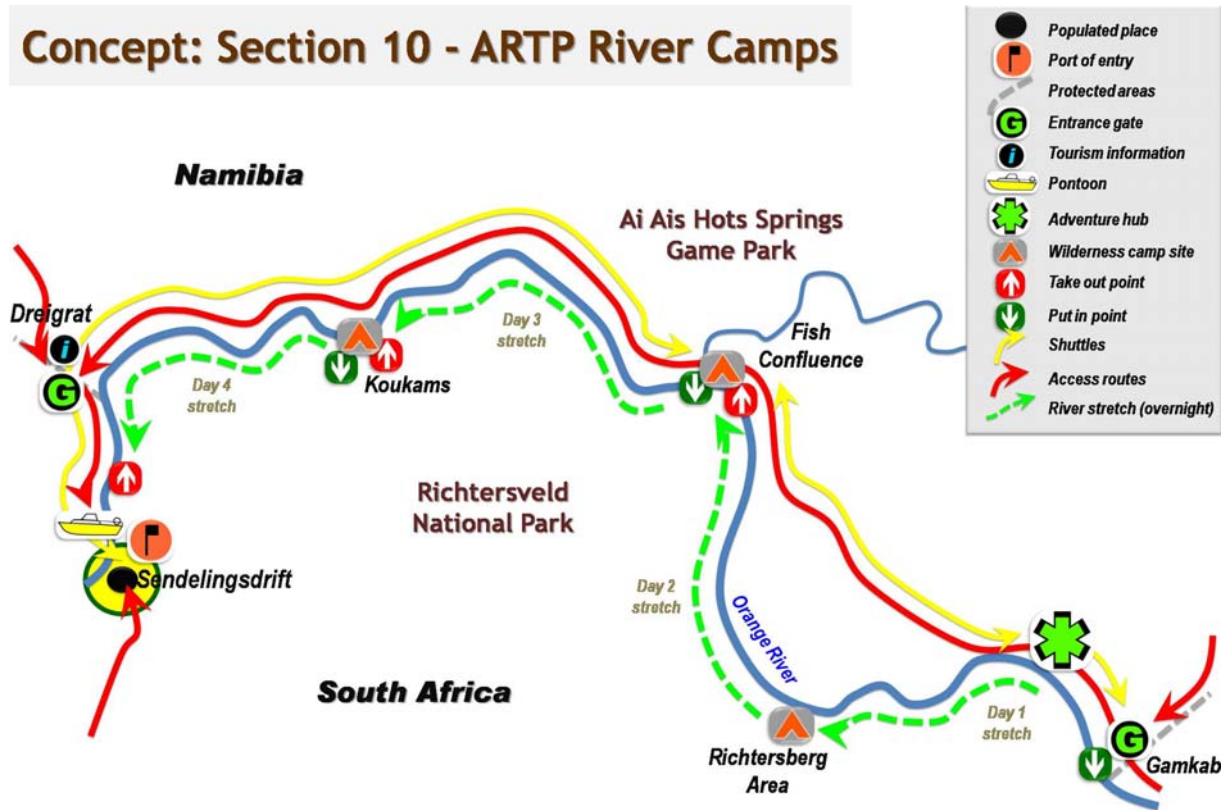


Figure 27: Integrated Concept Proposal, Section 10 (ARTP) – River Camps

Concept: Section 10 - Luxury Camps

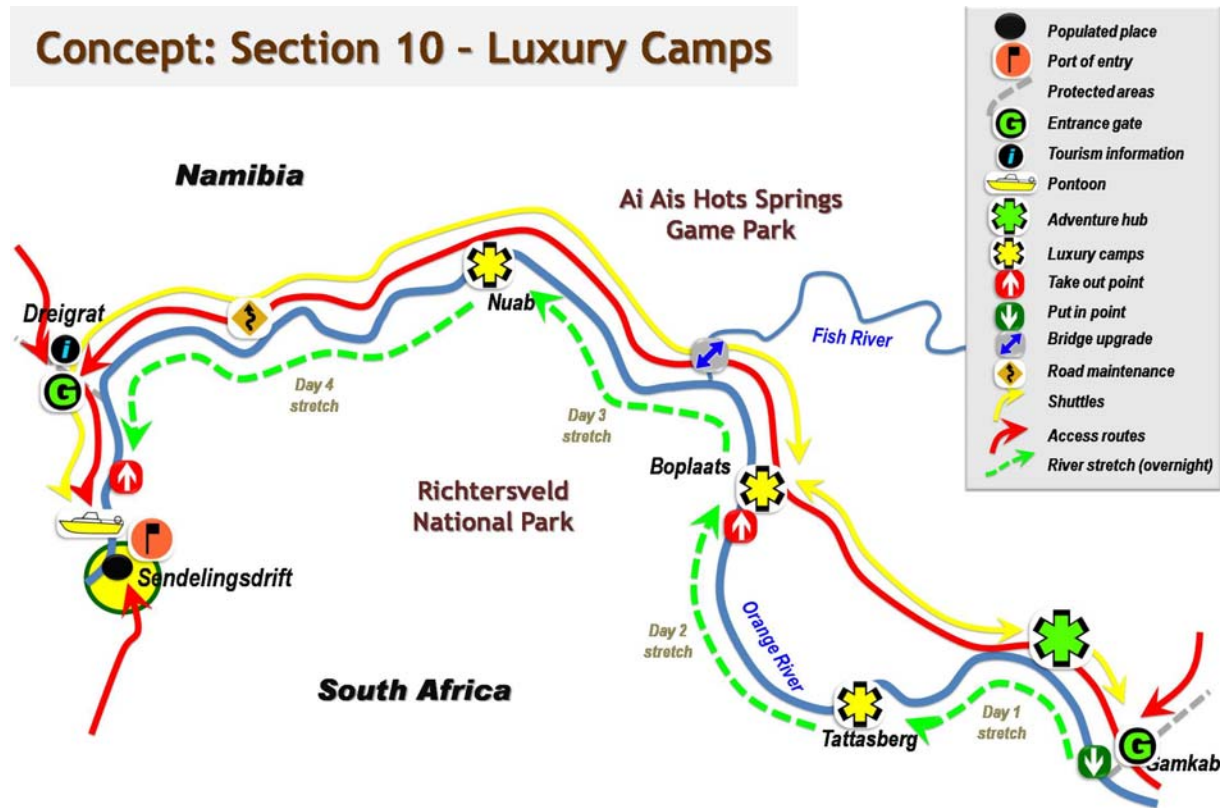


Figure 28: Integrated Concept Proposal, Section 10 (ARTP) – Luxury Camps

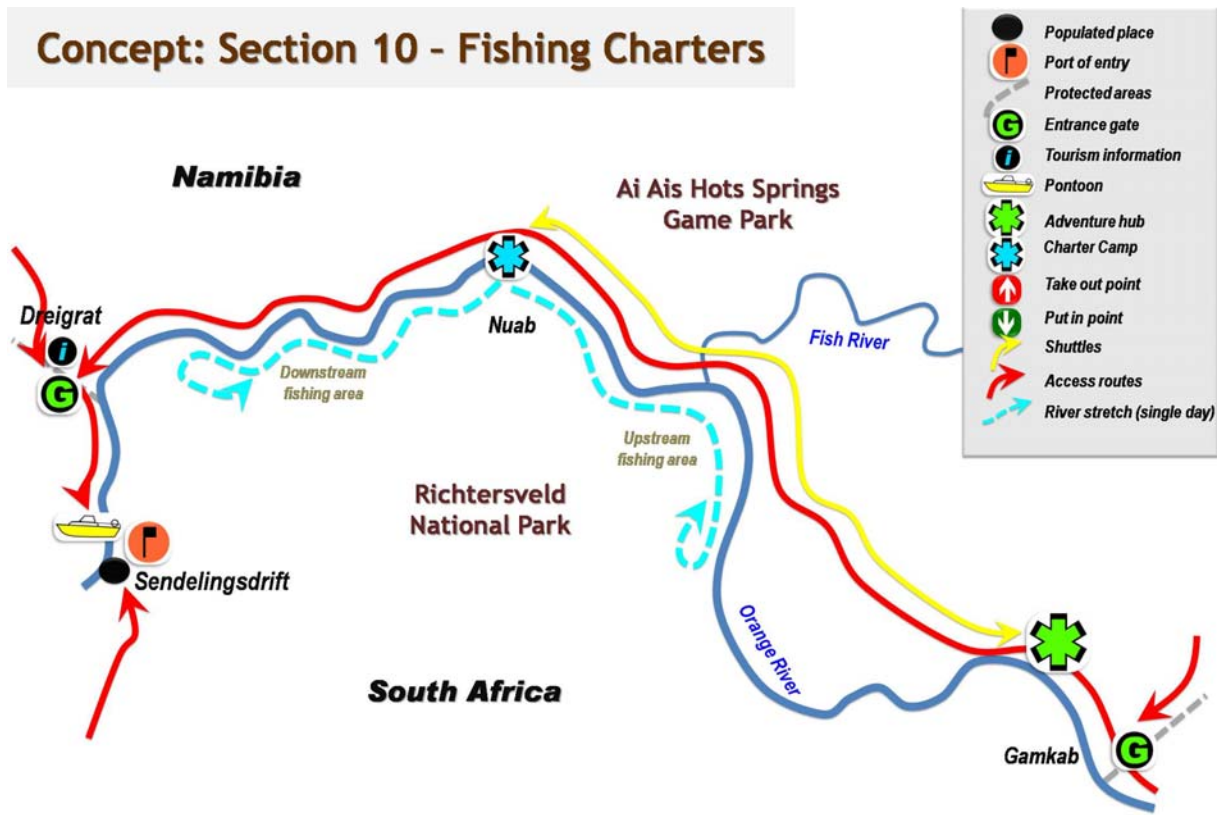


Figure 29: Integrated Concept Proposal, Section 10 (ARTP) – Fishing Charters

4.3.10.2 Sensitivities

This river section represents a microcosm of most of the river landscapes, offering maximum diversity, ideal for ecotourism development. Environmental sensitivities include concerns regarding water quality emanating from agricultural development and the settlement at Aussenkehr.

Despite being within the ARTP, several aspects such as the Rosh Pinah road, mine and prospecting affect the integrity of the riparian habitat, resulting in most of the river being classified as low impacts, yet with the portion below Nuab ranging from moderately to totally transformed, mostly as a result of mining activities both in South Africa and Namibia.

Critical to ensuring ecological connectivity and protecting the last remaining pristine portion of this river section, it is essential that the portion of the river between Gamkab and Tattasberg receive special attention and protection. This portion of the river is the last remaining portion where there are no impacts from roads, tracks, tourism infrastructure or mining activity.

Since this river section falls entirely within the ARTP, sensitivities do exist regarding access control, resource impacts, benefits and finances. Through the ARTP structures, and specifically through agreements similar to those proposed for the Kgalagadi Transfrontier Park's financial protocols, it would be possible to address the manner in which the ecotourism potential could be unlocked equitably, with financial benefits to both countries, even though the logistics and access would be undertaken from Namibia. An advantage of this approach is that the Product would be able to draw on the brand awareness of the Namibian Parks, ease of access as a result of the mine road, yet still be able to provide a direct and tangible benefit to the Richtersveld Community.

Due to the presence of mining activities within the ARTP concerns regarding the quality of the guest experience can be raised, yet it is believed that if correctly interpreted and included as part of the cultural

landscape, specifically the formation of the diamondiferous terraces and the history of prospecting in the region, as well as discussions included pertaining to the difficulty experienced by the conservation authorities in managing these impacts, these aspects can be overcome.

Additionally, the change in river landscapes from rocky and braided, to perennial pools influences the type of river experience that guests which be exposed to. To overcome this it is critical that guides be trained in briefing guests to broaden an understanding of each sections river landscapes and vegetation types, as well as cultural use thereof.

Additionally, since it is critical that this river section be financially viable, and ecologically sustainable, it is recommended that differentiation of the product is offered. By providing luxury river trips, as well as classic or traditional trips, the market can be broadened by making the experience more accessible. This should contribute to increasing the viability of this section.

Crowding, such as currently experienced along the Noordoewer-Aussenkehr section, is perceived as a potential problem. However, by only having a single concessionaire offering the product from both Gamkab Adventure Hub, and collecting guests from Sendelingsdrift, these aspects can be addressed by utilising time-spatial planning techniques, radio communication between groups, experienced guides, and operational practices.

Visual impacts as a result of developments along the river can be negated by placing permanent infrastructure away from the river, enhancing the desert experience rather than the river experience. This dual experiential approach will fit in well with the luxury river trips.

To further diversify the product range, as well as bolster financial viability, it has been recommended that a fishing experience be offered within the portion of the river that has large perennial pools. A sensitivity that arises is whether this should be allowed within the protected areas. Due to current impacts along the river, as well as the need to illustrate the value of sport fishing as an alternative to gillnetting, it is recommended that this experience be allowed, using “catch-and-release” principles. (Refer Map 99.)



Map 99: Habitat Integrity, Section 10 (ARTP)

4.3.10.3 CDP

Southern Namibia is characterised by unique biodiversity associated with the transition between summer and winter rainfall, resulting in two distinct vegetation types – succulent Karoo, and Nama-Karoo. Both these vegetation types are traversed by the LOR, a river that has been the lifeline within this arid region. As such human development has been influenced by the availability of water, soil fertility and climatic influences.

This tourism development concept has been prepared based on initial consultative discussions and fieldwork, and was endorsed by the Minister of Environment and Tourism in a briefing meeting held on 4th July 2008.

The proposed product is based within the shared resource area between the Ai-Ais Hot Springs Game Park and the Richtersveld National Park, the core area of the ARTP, and focuses on the uniqueness of a large perennial river flowing through a desert. Currently, the main focus of the well established rafting and canoeing industry along the LOR is from Noordoewer to Aussenkehr. By establishing an adventure hub at Gamkab, the formalised river industry believes that the portion of the river from Gamkab to Sendelingsdrift can be utilised in a viable and sustainable manner.

This possibility has been established by the opening of the Sendelingsdrift port of entry, and the Pont, creating an alternative access to the region and its resources. The presence of the Noordoewer-Rosh Pinah road further enhances the tourism potential of the river by allowing for the establishment of a series of luxury river safari camps along the river and an adventure hub at Gamkab.

Not only will this product unlock the tourism potential of the river section within the Ai-Ais Hot Springs Game Park, and the ARTP, but also vastly diversify the product base within the Region, both on land and on the river.

Packaged as a single concession this section could offer three distinct products (refer Map 100):

- Luxury river safaris: single – multi day (ex-Gamkab and ex-Sendelingsdrift);
- Adventure river trips: single – multi day (ex-Gamkab and ex-Sendelingsdrift); and
- Fishing charters: single – multi day (ex-Gamkab and ex-Nuab).

The role of the ARTP is critical in this river section, since with access controls at either side, Gamkab and Dreigat, it is possible to control activities within this shared resource area. By doing this it should be possible to utilise the Tattasberg camp as part of the luxury river experience, changing its function from being an underutilised 4x4 camp to becoming an integral part of a unique luxury river safari, significantly raising its status and occupancy. This change in use must be discussed between the Richtersveld CPA, Trust and the SANParks, so that it can be redeveloped as a fully catered and serviced lodge rather than a self-catered 4x4 camp.

As a shared resource area within the ARTP, it will be necessary to coordinate and align all tourism infrastructure and use along shared principles. It is envisaged that the river experiences – luxury river safaris; classic river adventure trails; and the charter trips (birding and fishing) – should lead the way in aspects such as access control measures, safety standards; revenue sharing; product development; market segmentation and differentiation, concession management and community equity modelling. It is hoped that the other tourism uses within the shared resource area follow a similar and aligned approach, rather than stimulating “tit for tat” development.

Due to the limited access to and along the shared resource area, and the nature of the terrain being extremely rugged and inaccessible on the South African side, while the Namibian side is extremely accessible due to the presence of the Rosh Pinah mining road, it is recommended that besides the Tattasberg Luxury River Safari Camp, the South African side target the 4x4 market, utilising the Richtersberg; De Hoop; Pootjiespram; and Sendelingsdrift camps; while the Namibian side targets the river industry.



Map 100: CDP, Section 10 (ARTP)

- *Luxury River Safaris*

The ideal product should consist of an *Adventure Hub at Gamkab*, consisting of a lodge, self-catering accommodation and campsite, as well as facilities for storing and maintaining equipment such as canoes, rafts and vehicles. This facility will also serve as support to the access control gate at Gamkab, which will control access into the Park from the south, and could also be used for aspects such as a tourism information centre for the TFCA.

Linked to this Lodge and associated facilities would be three *luxury River Safari Camps*, which would be serviced from the main road along the river, allowing for a river safari product which breaks the current camping trend, thereby broadening the market and allowing access to the river for top-end tourists. It is proposed that these River Safari Camps be based at Tattasberg; Bo Plaats and Nuab.

Typically a product would consist of guests arriving at Gamkab Lodge on the first day, spending the night at the lodge, receiving an orientation presentation and discussion pertaining to the Park, as well as the TFCA, focusing on the biodiversity and cultural significance of the area.

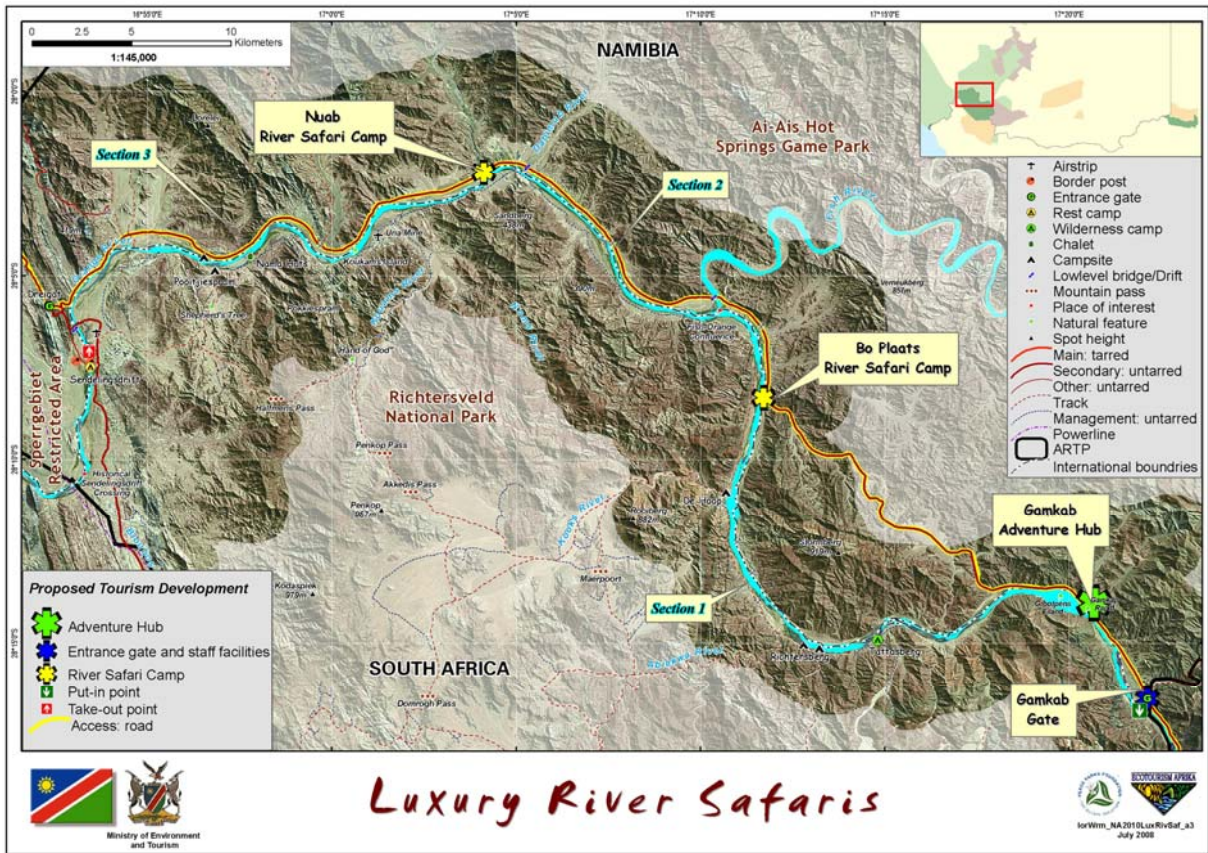
The second day would entail a safety briefing, short kayaking exercise, and a departure after breakfast at the lodge, with a short shuttle to the Gamkab Gate put-in point, followed by a paddle of 16.5km to the Tattasberg Luxury River Camp. The afternoon can be spent in camp, swimming in the river, followed by a 4x4 game drive to a scenic spot either overlooking the river, or at one of the large cliffs in one of the tributaries close to Richtersberg.

Most of the third day would be spent on the river, with regular stops for photographs, swimming, lunch, and arrival at the *Bo Plaats River Safari Camp* early in the afternoon, a total distance of 16.5km. After a short siesta, guests can be transported in game drive vehicles to a viewpoint overlooking the Orange Fish river confluence to enjoy sundowners prior to returning for dinner at the Camp.

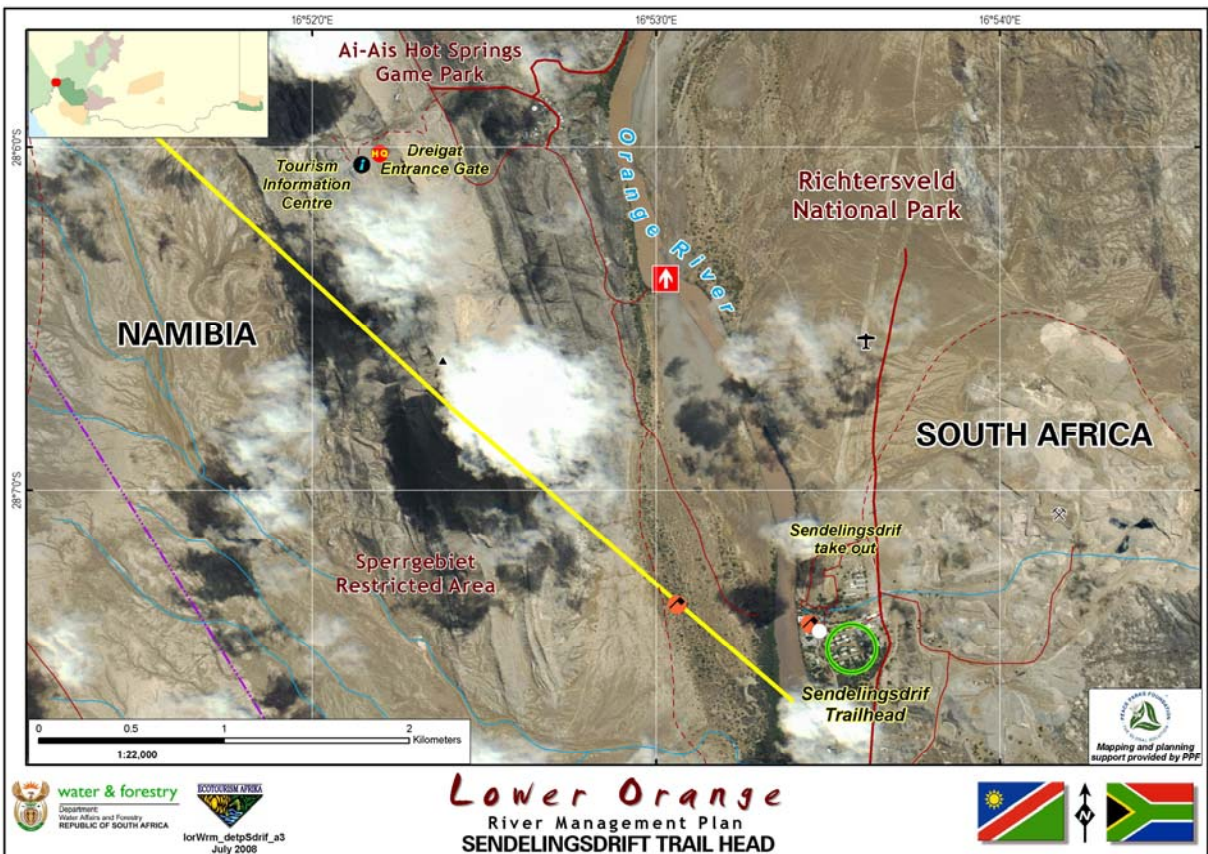
Day 4 would see a leisurely breakfast, followed by a slow paddle to the *Nuab River Safari Camp* possibly stopping for lunch along the way, followed by a rest and short excursion into the desert, possibly for a surprise bush dinner, returning to the camp early evening. The total distance on the river for the day is 18km.

The final day incorporates a breakfast at the Nuab Camp, followed by paddling through several small rapids to a take out point close to Sendelingsdrift, lunch enjoyed en route, returning to the Gamkab Lodge for a relaxing evening. Alternatively guests could link onto a visit to the Sperrgebiet from this take out point. The total distance on the river is 71.5km, over 4 days.

Two 2 day Luxury river safaris from Gamkab Lodge to Bo-Plaats (33km), and from Bo-Plaats to Sendelingsdrift (44km) could also be offered as an option to top end tourists, where the guests would only use one of the two day sections of the river. (Refer Maps 101 and 102.)



Map 101: CDP, Section 10 (ARTP) - Luxury River Safaris



Map 102: CDP, Section 10 (Sendelingsdrift Trailhead)

- *Classic River Adventure Trails*

Based on existing use patterns, this section of the river could also be used for single and multi day river adventure trips out of Sendelingsdrift and Gamkab, utilising the easy access on the Namibian side. Even though river adventure products based on the adventure market involve camping, these products are compatible with the luxury River Safari trips since they can be offered to small focused groups using different time sequences to the River Safari trips, broadening the viability of this concession.

This product would require the establishment of three basic river camp sites for use by adventurous tourists. These camps can be established along the river between Gamkab and Sendelingsdrift, specifically at an area close to Tattasberg, at the Fish River Confluence, and close to the islands south of the Koukams River confluence. The impact of these camps would thus not negatively impact on the River Safaris product or guest experience.

This product can be offered to guests from either Sendelingsdrift or Gamkap, doubling the available clientele, with guests from Sendelingsdrift being picked up at the Border (Pont), negating the need for vehicle crossings, and shuttled to either the trailheads at Gamkab, Fish River Confluence, or Koukams.

This will allow for:

- One day river trips - Koukams Island to Sendelingsdrift – 17km),
- Two day river trips: Gamkab to Fish Confluence –45.5km; Fish River Confluence to Sendelingsdrift – 39km; and,
- Four Day Trips - Gamkab to Sendelingsdrift – 84.5km.

These options make this river section extremely attractive due to the increased economic viability of available adventure options.

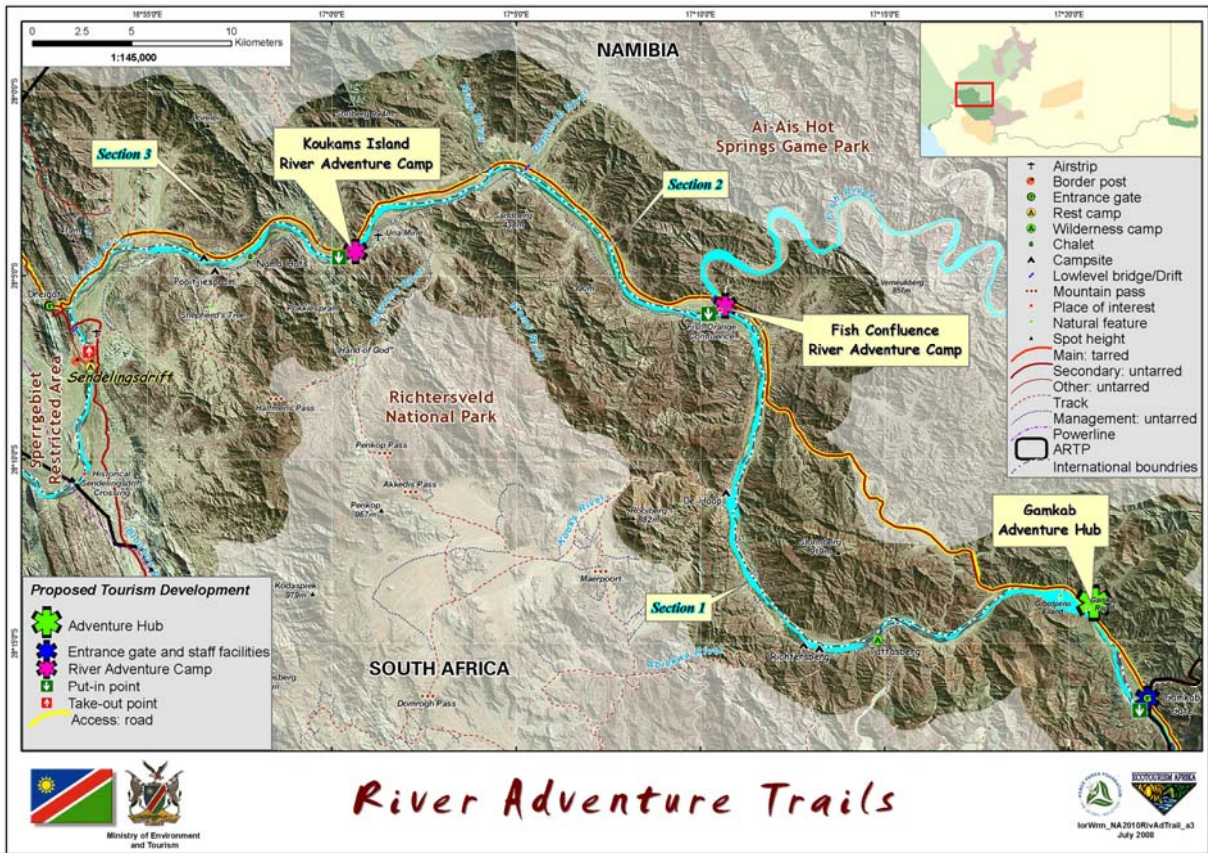
Linking the Luxury River Safaris with the Classic Adventure Trail options, and keeping this as a single concession will increase the attractiveness of this concession tremendously, since the risks associated with the higher risk luxury market will be offset against the adventure market with a proven track record. (Refer Map 103.)

- *Motorised Charter Trips*

The long, slow flowing pools along the river from the Fish River Confluence to Sendelingsdrift also afford the possibility for motorised guided trips, either from the Gamkab Adventure Hub, or from a fishing Safari Camp along the river, possibly close to the Nuab River confluence.

This product has not been offered along this portion of the Orange River, yet due to the size of the angling and birding industry, growth within sectors such as fly fishing and birding, linked to the beauty of the area, motorised charter trips should be an option. Examples abound along many of Africa's great rivers – Chobe, Zambezi, Okavango – and it is believed that a product which focuses on the endemic bird species, and specific fish species such as yellow fish, as well as other species of the LOR, and these charters should provide a viable option for a concessionaire.

Motorised Birding and Fishing Safaris, linked with desert excursions, and rafting and kayaking, of various length ranging from single day to multiple days can be offered, utilising approximately 38km of river between De Hoop and Pootjiespram (Refer Map 104.)



Map 103: CDP, Section 10 (ARTP) - River Adventure Trails



Map 104: CDP, Section 10 (ARTP) - Fishing Charters

- *Tourism Facility Requirements*

Tourism facilities required for this river section would be (refer Maps 105-111):

- Gamkab Lodge (12 – 16 pax);
- Service Hub (Gamkab);
- Gamkab chalets and campsite;
- Two luxury River Safari Camps (12 – 16 pax) – (Bo Plaats and Nuab);
- Fishing Charter Camp (Nuab); and,
- 2 River adventure camps (Fish River Confluence and Koukams Island).

Training for staff will need to be provided by the rafting and kayaking industry, hospitality industry and the fishing charter industry, while equipment such as rafts, kayaks, game drive vehicles, shuttle vehicles, flat bottomed fishing boats etc., must be sourced and supplied by the operator.

Figure 30 illustrates examples of vernacular architecture for the arid cluster TFCAs which could form the architectural guidelines for the requisite tourism infrastructure.

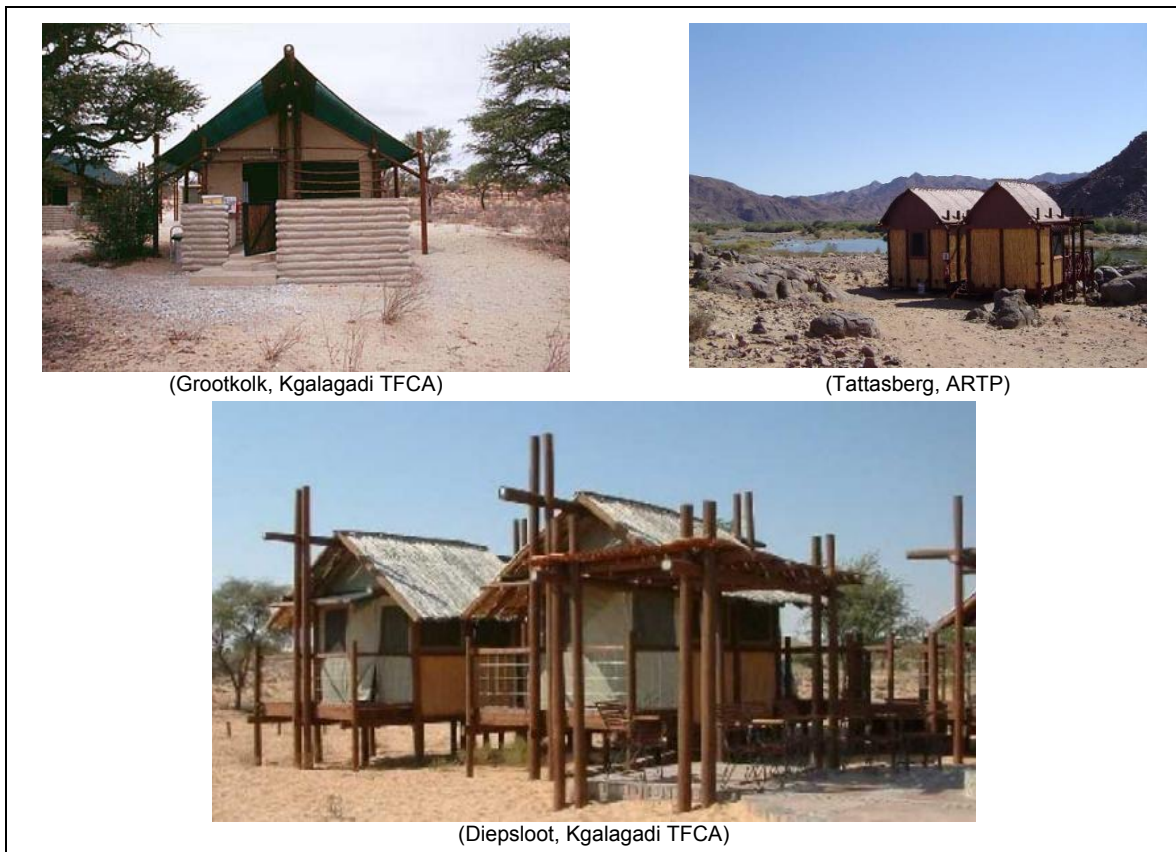
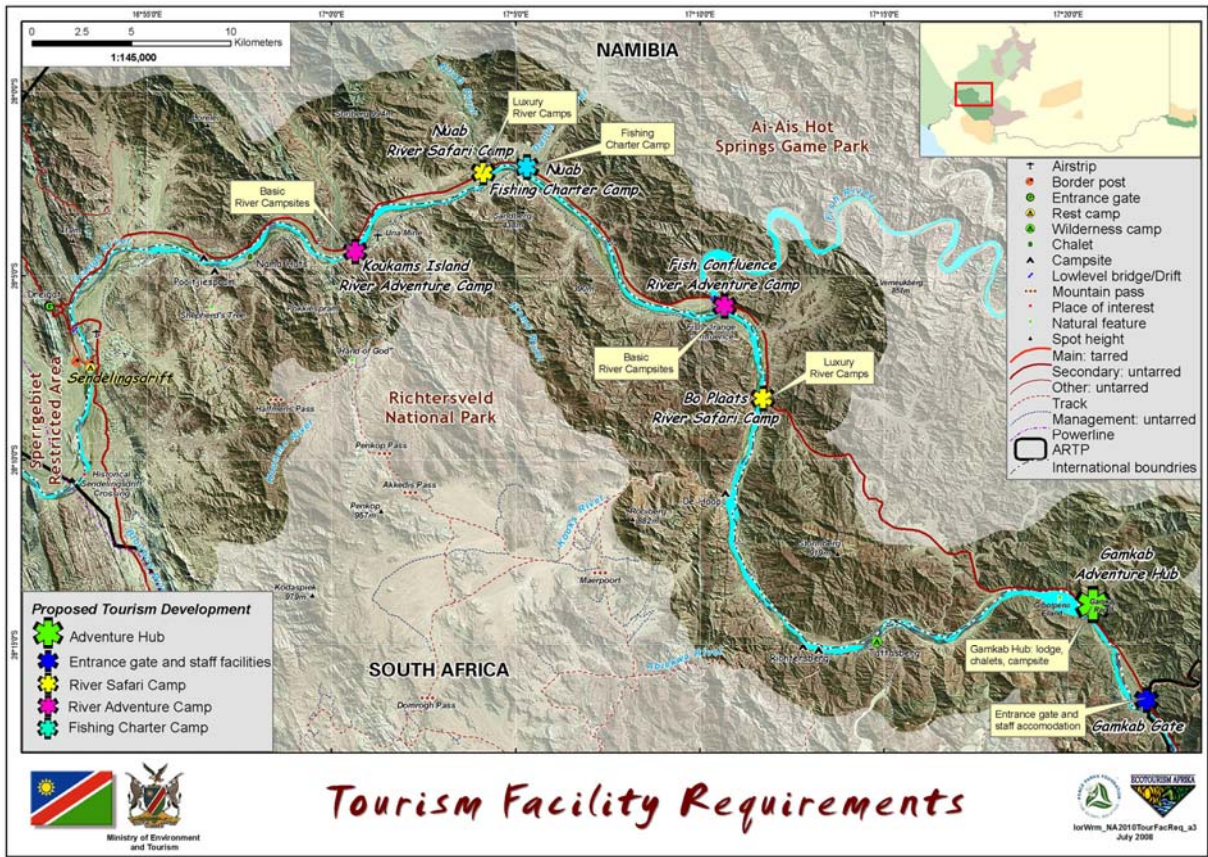
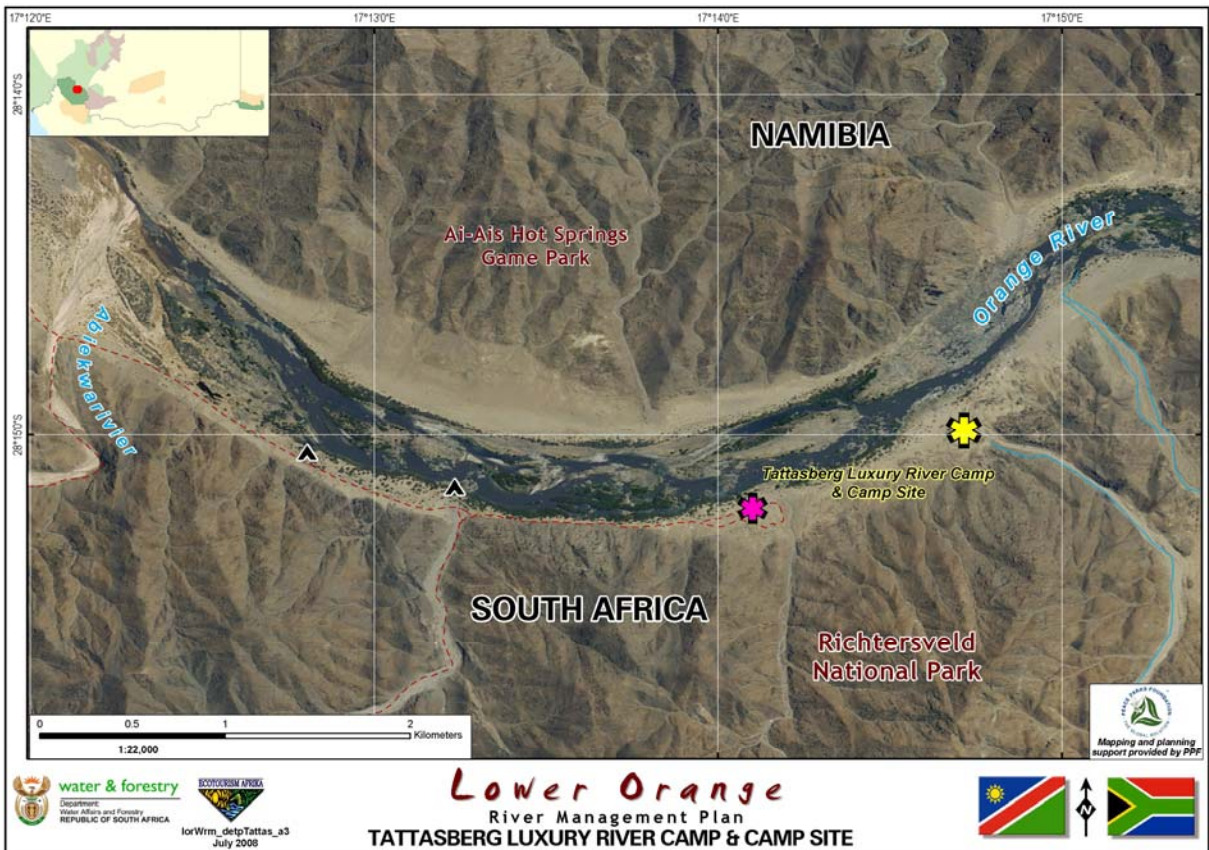


Figure 30: Examples of Local Vernacular Architecture





Map 107: CDP, Section 10 (Tattasberg Luxury River Camp and Camp Site)



Map 108: CDP, Section 10 (Boplaats Luxury Camp)



Map 109: CDP, Section 10 (Nuab Luxury River and Charter Camp)



Map 110: CDP, Section 10 (Fish Confluence Wilderness Camp Site)



Map 111: CDP, Section 10 (Koukams Wilderness Camp Site)

• *Supporting Infrastructure Requirements*

Supporting infrastructure required for this portion of the river includes (refer Maps 112 and 113):

- Gamkab Entrance Gate (Staff accommodation);
- Fish River Bridge upgrade;
- Road maintenance and upgrade (possible re-alignment);
- Dreigat Tourism Information Centre; and,
- Park Management Headquarters (Dreigat).

The design and architecture of the supporting infrastructure will be based on the designs that have been used within the Arid TFCA Cluster, specifically at the Mata Mata Entrance Gate.

Below Table 10 summarises the daily distances for the four day river safari, as well as the individual distances for shorter river trips:

Table 10: River Distances, Section 12 (ARTP)

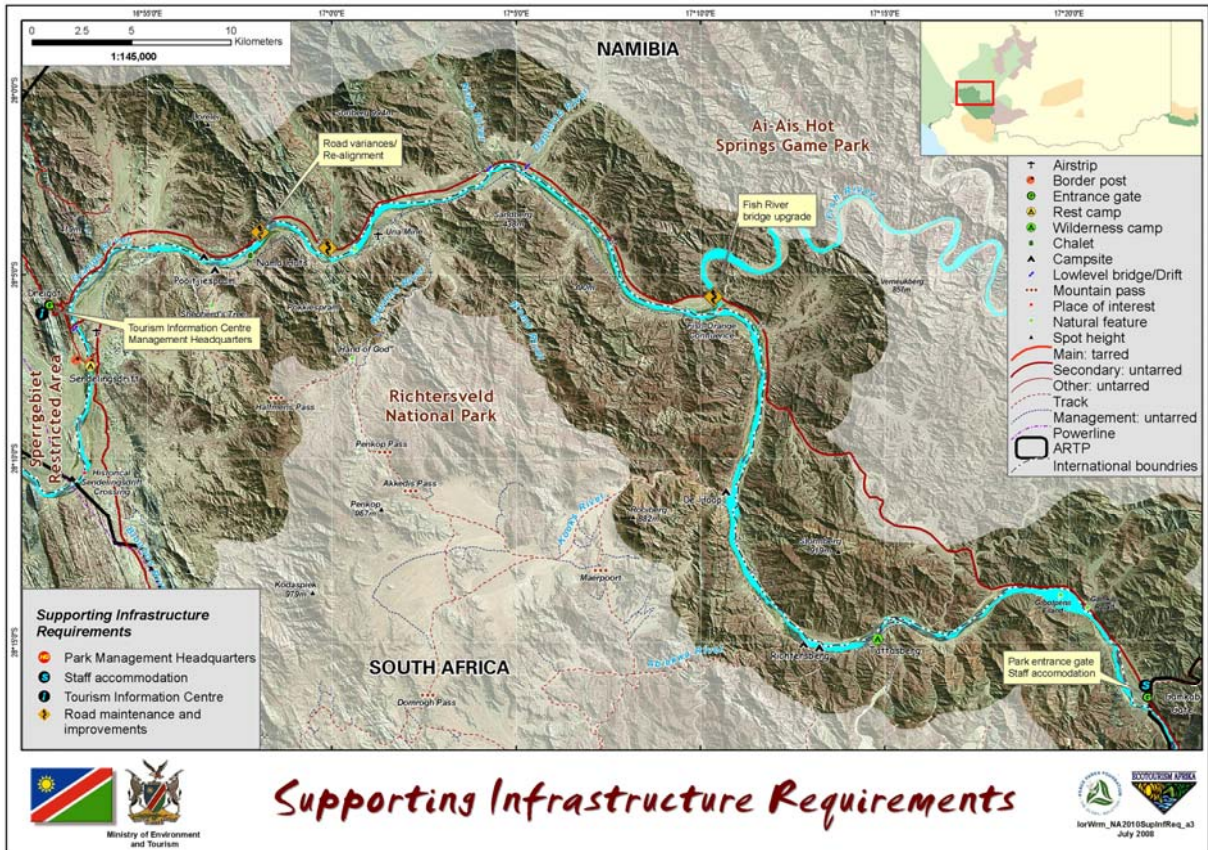
Section	Product	Activity	From	To	Km	Total distance
10	a. Four day river safari	Rafting	Gamkab Gate	Gamkab Hub	5.50	84.50
			Gamkab Hub	Tatasberg area	20.00	
			Tatasberg area	Fish Confluence	20.00	
			Fish Confluence	Koukams	22.00	
			Koukams	Sendelingsdrift	17.00	
10	b. Four day luxury safari	Rafting	Gamkab Hub	Tattasberg Restcamp	11.00	71.50

Section	Product	Activity	From	To	Km	Total distance
			Tattasberg Restcamp	Boplaats	16.50	
			Boplaats	Nuab	18.00	
			Nuab	Sendelingsdrift	26.00	
10	c. Fishing Charters	Fishing	Upstream	De Hoop	23.00	38.50
			Downstream	Pooitjiespram	15.50	

4.3.10.4 Requisite Actions

The following actions are required to ensure that the CDP for this river section can be achieved:

- Discussions between the Richtersveld CPA and Namibian Government as landowners regarding access to and use of land and existing facilities for the requisite developments e.g. Adventure Hub at Gamkab; Luxury River safari camps at Tattasberg, Bo-Plaats; and Nuab, wilderness camp sites along the river, and Charter Camp etc;
- Develop Gamkab Gate as a control measure for the southern portion of the /Ai/Ais Hot Springs Game Park;
- Restrict access at Gamkab Gate;
- Packaging of this river section components as one concession in terms of MET’s Concessioning Policy;
- Include this river section’s CDP in the ARTP tourism development planning process; and,
- Conclude a revenue sharing agreement with the relevant property owners.



Map 112: CDP, Section 10 (ARTP) - Supporting Infrastructure Requirements



Map 113: CDP, Section 10 (Gamkab Entrance Gate)

4.3.11 River Section 11 (Sperrgebiet)

4.3.11.1 Integrated Concept Proposal

Recognising the difficulties associated with access to the Sperrgebiet, and the need for the involvement of the Richtersveld Community, specifically the Sanddrift Community, in tourism development and operation, it is recommended that the existing tourism facilities at Stofbakkies and Brandkaros serve as the base for guided river trips, aimed at interpreting the rich cultural heritage, as well as birdlife of the area.

Various markets can be targeted by these two sites, yet the camping market should be targeted for Brandkaros, whereas a niche market of single groups, or lodge style guests can be targeted. This differentiation in markets will reduce competition and focus marketing efforts.

Approximately 90km of river would be available for river trips, and it is recommended that flat bottomed aluminium boats be used to transport guests on these trips.

The facilities at Stofbakkies will need some redesign to accommodate the change in market from self catered chalets to fully catered, guided facilities along the Orange River overlooking the Sperrgebiet. This can be done as a CPPP, with the community accessing finance for the redevelopment, or placing the responsibility of redevelopment on the private sector operator. However, the former option increases the equity share of the community, and immediately increases the viability of the concession.

The river guides should be trained to interpret this river section, as well as the uniqueness of the Sperrgebiet, from a biodiversity, ecological and geological perspective. (Refer Figure 31.)

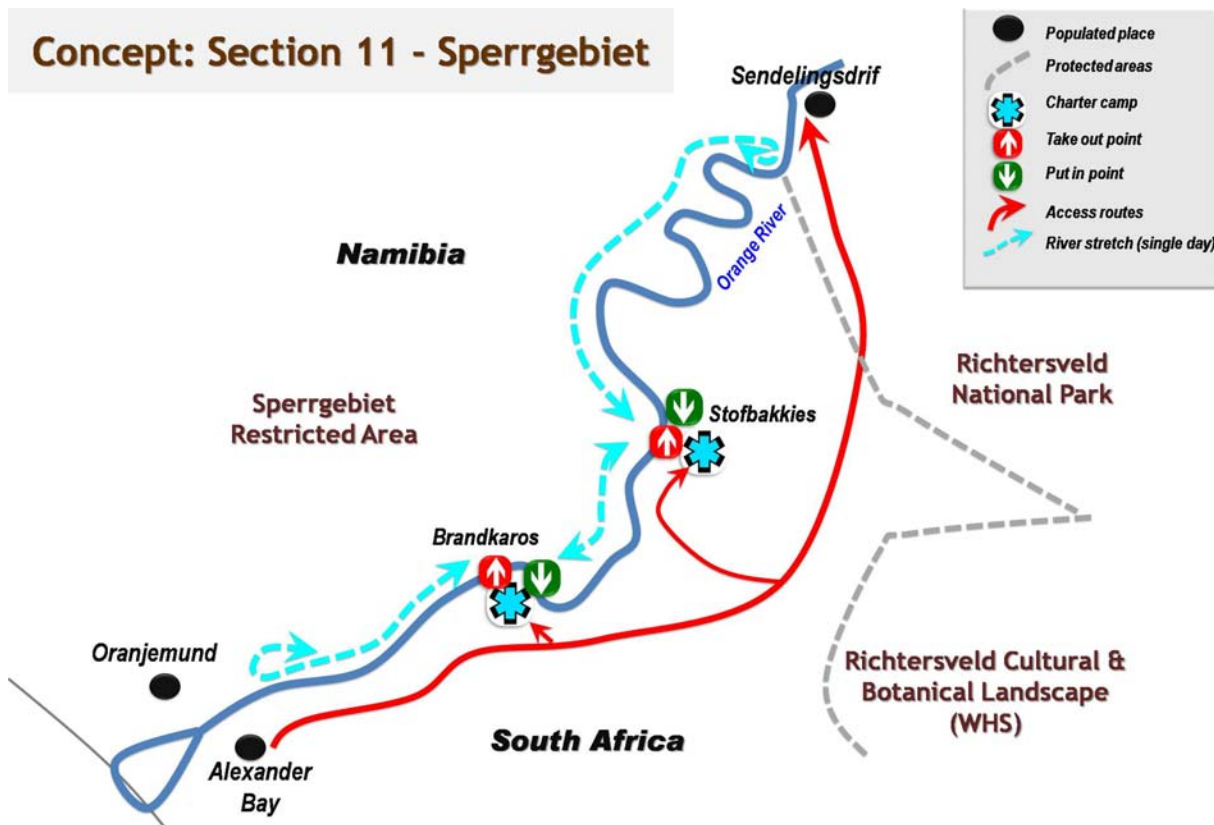


Figure 31: Integrated Concept Proposal, Section 11 (Sperrgebiet)

4.3.11.2 Sensitivities

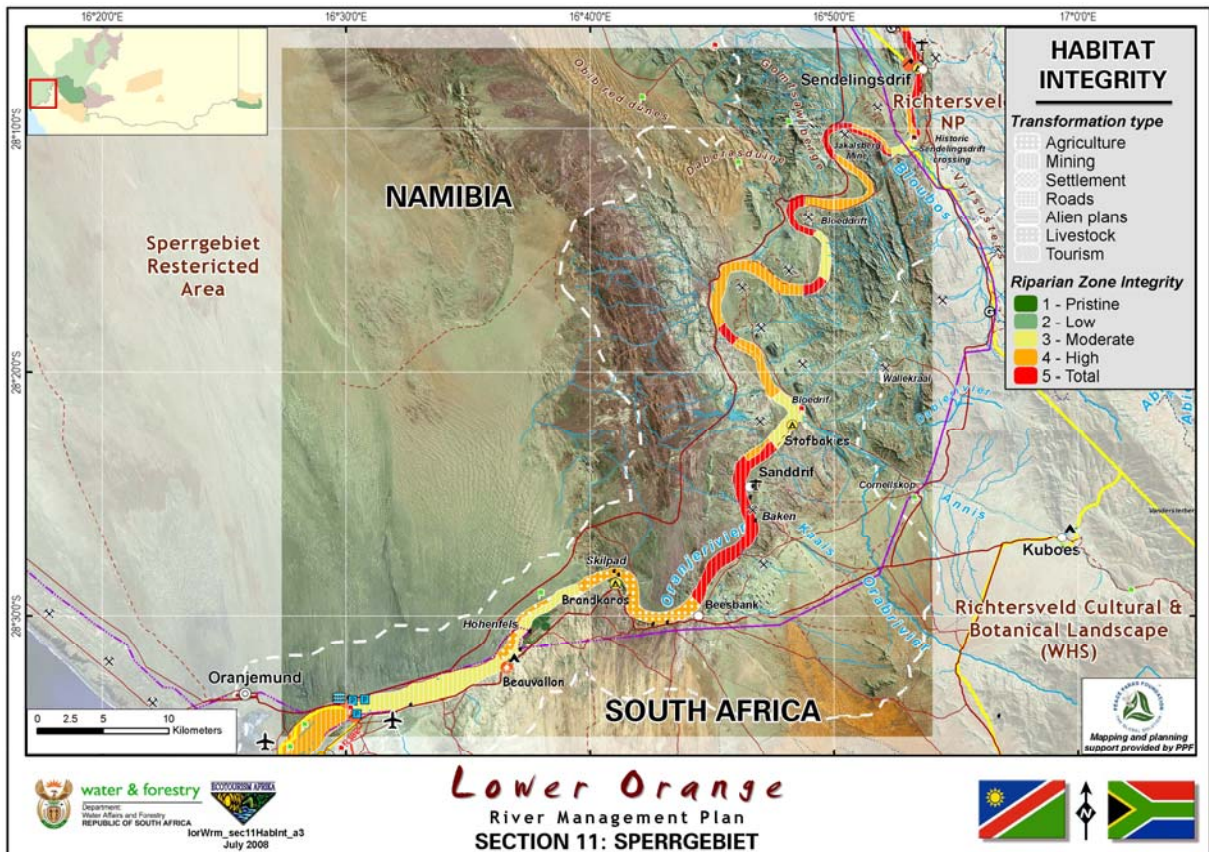
Despite being on the edge of the Sperrgebiet Restricted Area, proposed as a possible protected area within Namibia’s national conservation estate, the riparian zone’s integrity has been largely transformed through mining, agriculture and settlement, with the degree of transformation ranging from moderate to total.

Sensitivities can be expected regarding uncontrolled access to the Sperrgebiet, the various mines along this river section and the farms between Brandkaros and the bridge. These sensitivities need to be addressed if the ecotourism potential along this river section is to be unlocked.

Additional aspects that must be included in the planning is the influence of wind, making most of this area difficult for rowing and rafting, exacerbated by the flat gradient resulting in the river meandering over the coastal plain.

The lack of a well structured tourism industry along this river section, as a result of *ad hoc* and individual developments in the past, and the lack of an established brand, since this river section is not in the national park, in the Sperrgebiet, and not on the coast, the area is largely unknown. The lack of benefits to the broader Richtersveld Community should be addressed, in an a manner that is tangible and measurable.

The tourism product base should also be assessed and possibly diversified, since the current product base is limited largely to a localized market, and occasionally 4x4 guests en route to the Richtersveld or Namibia via the pont at Sendelingsdrift. Despite the intentions of the Poverty Relief Programme, the infrastructural development support at Sanddrift and Stofbakkies, seems to be experiencing challenges from an occupancy and marketing perspective. A critical assessment of these developments within the broader tourism development framework must be undertaken to ascertain the specific role that Brandkaros and Stofbakkies will be able to play in this river section. (Refer Map 114.)



Map 114: Habitat Integrity, Section 11 (Sperrgebiet)

4.3.11.3 CDP

Based on the integrated concept proposal for this section of the LOR, the developmental concept is to utilise both Stofbakkies and Brandkaros as bases from which guided and motorised river charters can be offered, with Stofbakkies focusing on providing a fishing camp style experience, while Brandkaros can continue to target the existing market. (Refer Maps 115-117.)

Stofbakkies should be assessed to ascertain what infrastructural, operational and developmental changes would be required to enable this camp to operate as a fully guided, fully catered charter camp specialising in birding and fishing trips. Approximately 93km of the river would be available for these trips depending on the level of the river, with 46.5km available upstream from Stofbakkies to the historical Sendelingsdrift, 25km between the two camps, and 21.5 downstream of Brandkaros to the bridge.

Depending on the outcome of the Orange River Mouth Nature Reserve proclamation, it could be possible that portions of this river section be incorporated into the formally proclaimed protected area, an aspect that will greatly enhance the status of the river section, and contribute to the management of the ecosystem.

Below Table 11 summarises the distances available for the charter trips along this section of the river:

Table 11: River Distances, Section 11 (Sperrgebiet)

Section	Product	Activity	From	To	Km	Total distance
11	a. Guided river trips	Birding	Stofbakkies	Old Sendelingsdrif	46.50	93.00
			Middle Section		25.00	
			Brandkaros	Oppenheimer Bridge	21.50	

4.3.11.4 Requisite Actions

The following actions are required to ensure that the CDP for this river section can be achieved:

- Discuss with the Richtersveld Community the possibility of using the two camps to unlock the ecotourism potential of the river;
- If possible, assess the developmental requirements of these camps; prepare detailed development plans and seek funding to use as community equity; and,
- Package the Stofbakkies site as a potential concession.



Map 115: CDP, Section 11 (Sperrgebiet)



Map 116: CDP, Section 11 (Stofbakkies Charter Camp)



Map 117: CDP, Section 11 (Brandkaros Charter Camp)

4.3.12 River Section 12 (Oranjemund)

4.3.12.1 Integrated Concept Proposal

Due to the planning initiatives that are currently being undertaken for the ORMNR the integrated concept proposal for the ORM needs to be incorporated to reflect the needs of the river usage with needs of the nature reserve.

The Draft Orange River Mouth Nature Reserve Management Framework under the Policy for Tourism Management states that the ORMNR will continue to serve as wide a range of markets and activities as possible and tourism pressures will be dealt with through intensive visitor management programmes rather than narrowing down the target markets. The integration of ORMNR's tourism products with other products and opportunities outside ORMNR will actively be facilitated - specifically within neighbouring communities. The tourism potential within ORMNR will be optimised through appropriate public/private partnerships in line with a strategy which subscribes that *"tourism should be government led, private sector driven, community based and labour conscious."* (DTEC, 2008).

Under the Policy for Partnerships under 'Social Responsibility' it is stated that *"[i]n the spirit of the operation of ORMNR, it must be stated that the private sector, Reserve Management and the community are all shareholders in ORMNR. Good communication between these parties is therefore essential."*

The private sector is seen as an important party in ORMNR, responsible for the planning, development, management, marketing and financing of large capital developments, as well as implementing projects and managing them on a contract basis where appropriate. These activities will create opportunities, such as jobs and small businesses. Where practical and feasible, these should be directed at the local people first. Should there be obstacles, especially regarding development and training needs, it is the responsibility of the private sector to identify these and address them where possible. In addition and where it proves cost-effective and meets required quality standards, supplies should be sourced locally. Local people and businesses should be afforded priority where possible."

This approach is in line with the objectives regarding the unlocking of the ecotourism potential of the river.

Various unique natural features such as the sand bar, spit, salt marsh, abundant birdlife - mainly waders and waterfowl, combined with the rich cultural importance of the ORM, can be combined into tourism products. These recommendations will need to be aligned with the management plan currently being prepared for the ORM, which is also a Ramsar Wetland.

It is recommended that both Namibia and South Africa develop tourism products based on the natural and cultural resources of the area, and both these products could be linked to campsites. On the South African side, this could be on the beach, strewn with driftwood, a symbol for all the drama associated with the river and its people.

The lack of accommodation promoting the unique natural and cultural features inherent to the ORM provides an opportunity to develop a beach camp on the South African side, incorporating views over the Atlantic Ocean, the Salt marsh, and the driftwood that characterises this area.

From the two trailheads controlled activities could be offered into these Important Birding Areas, providing opportunity for investment, training and skills development, as well as creating support for the conservation activities that are proposed for the area. As a site of international significance it is a site that few South Africans and Namibians know, or appreciate. Guided trips to observe the birds that make this Ramsar site unique would enable the conservation authorities in either country to lobby for support directly with visitors, stressing the importance of controls, as opposed to the currently uncontrolled 4x4 access. (Refer Figure 32.)

Concept: Section 12 - Oranjemund

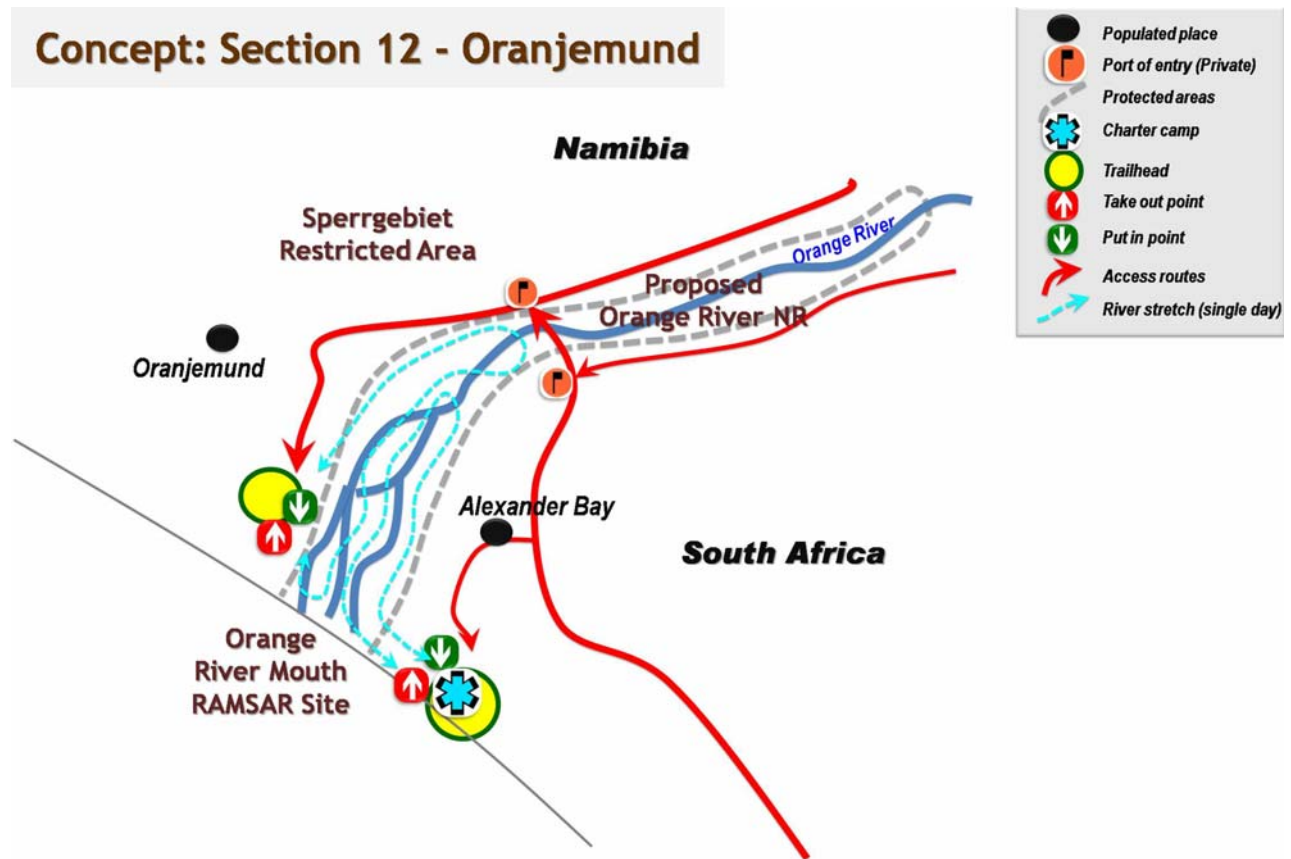


Figure 32: Integrated Concept Proposal, Section 12 (Oranjemund)

4.3.12.2 Sensitivities

The mouth of the Orange River, the largest river in southern Africa south of the Zambezi, is located on the Atlantic coast and forms the border between South Africa and Namibia. The ORM extends many kilometres inland from the coastline - a wetland environment that intrudes deep into an otherwise arid terrestrial environment. Characterised by extensive, shallow and turbid waters and mud banks, the ORM is a prime habitat for water birds. Shifting sandbanks at the mouth are susceptible to variations in the strength of river flow and in the energy of waves that move sand onshore, with the state of the mouth therefore being of a dynamic nature. When in flood, the Orange River pumps fresh, turbid water many kilometres out to sea, extending coastal phenomena far away from the shoreline for days at a time. At times like these, the lower Orange River and ORM naturally floods and rich organic mud is deposited on the floodplain and the tidal marshes near the mouth. Together with the rhythmic tidal inundation, the occasional river floods build up and nurture littoral salt marshes, which are at the very foundation of these valuable wetlands¹.

The ORM is of major conservation significance, particularly because of its wetland habitats and the biota it supports. The mouth itself and approximately 10 kilometres of the river, was listed as a Wetland of International Importance (Ramsar Convention) in 1991. It became the first transfrontier Ramsar site in southern Africa when Namibia ratified the Convention in 1995.

The ORM is also recognised as an Important Bird Area (IBA) by South Africa with the Namibian portion of the ORM forming a key component of Namibia's Sperrgebiet IBA (DTEC, 2008).

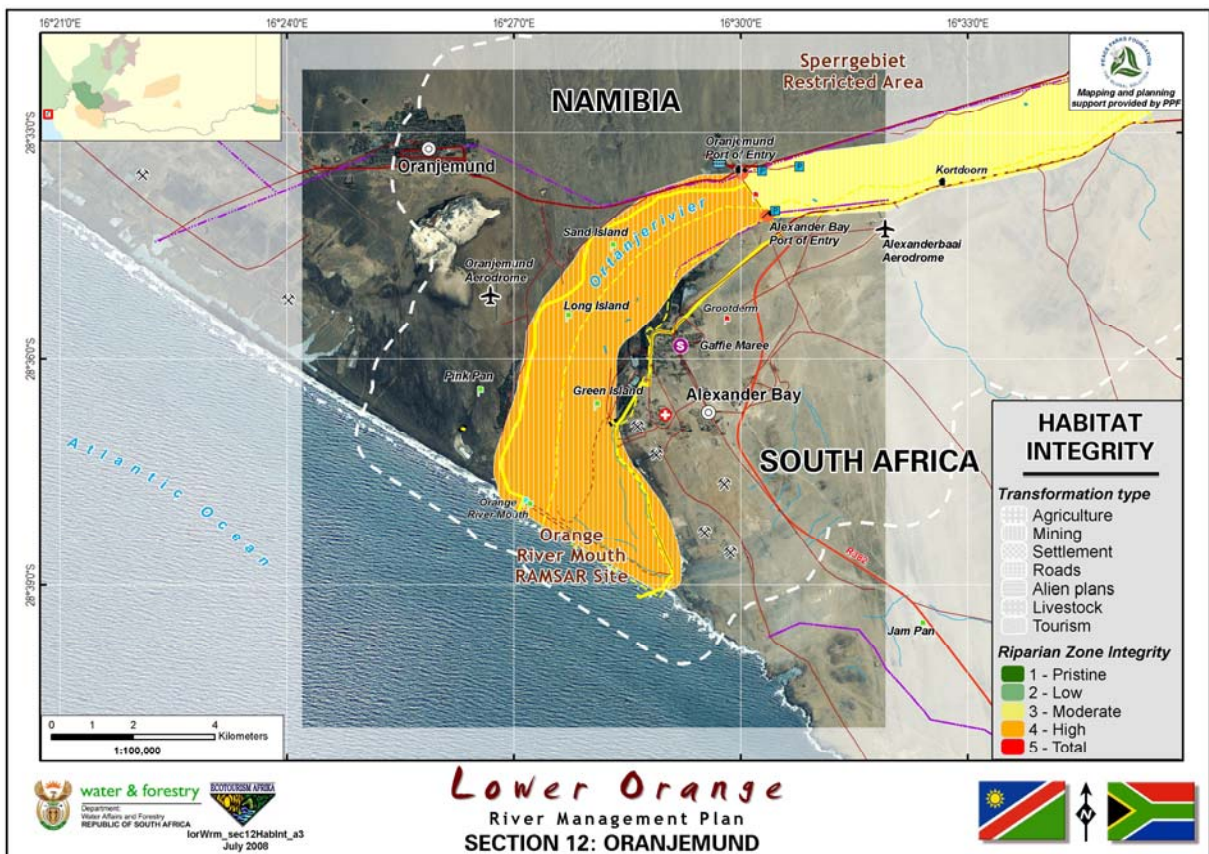
¹ Several anthropogenic factors such as adjacent diamond mining activities, river regulation, agricultural developments, recreational infrastructural development, etc. resulted in the collapse of the saltmarsh in the early 1990s, which meant a considerable loss of wetland habitat.

Although being a Ramsar site, the ORM did not have any formal protected status and was managed on an ad hoc basis by the two mining companies (viz. Alexkor and Namdeb) operating in the area. Ill-considered management practices both at the mouth and further upstream resulted in the degradation of the ORM Ramsar site. The South African portion of the ORM Ramsar site was subsequently placed on the Montreux Record on 26 September 1995.

Following the placement of the ORM on the Montreux Record, proposals for the establishment of a statutory protected conservation area at the ORM were made during 1995. Various discussions followed between the conservation authorities of South Africa and Namibia, the communities of Alexander Bay and Oranjemund, the Alexkor and Namdeb mine management, the Richtersveld Municipality and the Richtersveld Community. It is envisaged that this will culminate in the proclamation of the ORM as a protected area and Transfrontier Ramsar Site (ORMTRS).

Degradation of the ORM have already taken place as a result of several factors, particularly relating to adjacent diamond-mining activities, flow regulation of the river and its catchment, and poor management of the mouth. Modifications to the seasonal pattern of flow and reduced flood peaks are considered to be major contributory factors, which have resulted in the destruction of extensive areas of salt marsh habitat.

Uncontrolled 4x4 driving is also contributing to environmental degradation within the ORMNR and ORMTRS, with a small portion of the beach between the sea and the salt marsh hosting all the vehicles, resulting in numerous tracks and paths being utilised, spoiling any birding and nature appreciation. Currently this portion of the reserve is effectively an off-road playground, and does not contribute to ecotourism in any meaningful way. (Refer Map 118.)



Map 118: Habitat Integrity, Section 12 (Oranjemund)

4.3.12.3 CDP

Due to the sensitive nature of the salt marsh, bird breeding and feeding areas, and uncontrolled access to the diamondiferous areas, it is recommended that two motorised boat charter concessions be offered, one from Namibia and one from South Africa, enabling guests to experience more than what is currently being offered.

These guided charter experiences should focus on the importance of the salt marsh as an estuarine ecosystem of international importance, the role this estuary plays as an important birding habitat, the historical aspects such as the role it played in early European exploration, the role of the river in the region’s diamond history, and the stories, myths and legends associated with this river section.

It is recommended that on the South African side of the Ramsar site, an overnight camp be established on the beach close to the southern entrance gate overlooking the marsh. This beach camp will enable visitors to experience the ruggedness of this coast line, the weather associated with the region, such as its mists. The camp should be very rustic utilising the driftwood for enclosures or bomas and as shelter from the wind, targeting the 4x4 market en route to the Richtersveld, /Ai/Ais Hot Springs Game Park, or to the Sperrgebiet. This campsite will provide access to an environment that exists nowhere else in South Africa, yet has proven to be popular in Namibia, as seen in the various desert 4x4 camps and trails along the coast. Both the camp and the charter operation should be part of one concession.

With the planned opening of Oranjemund as a town, it can be assumed that numerous guest houses and accommodation options will become available. From this market the Namibian charter operation would be able to draw its market.

Proposals should be considered in and subject to the joint or country specific management framework/s approved for the ORMTRS, including concessioning processes/permit systems/fees/access control and any development plans agreed to by the two countries. (Refer Maps 119-121.)

Below table 12 provides insight into the available distance for motorised birding charters:

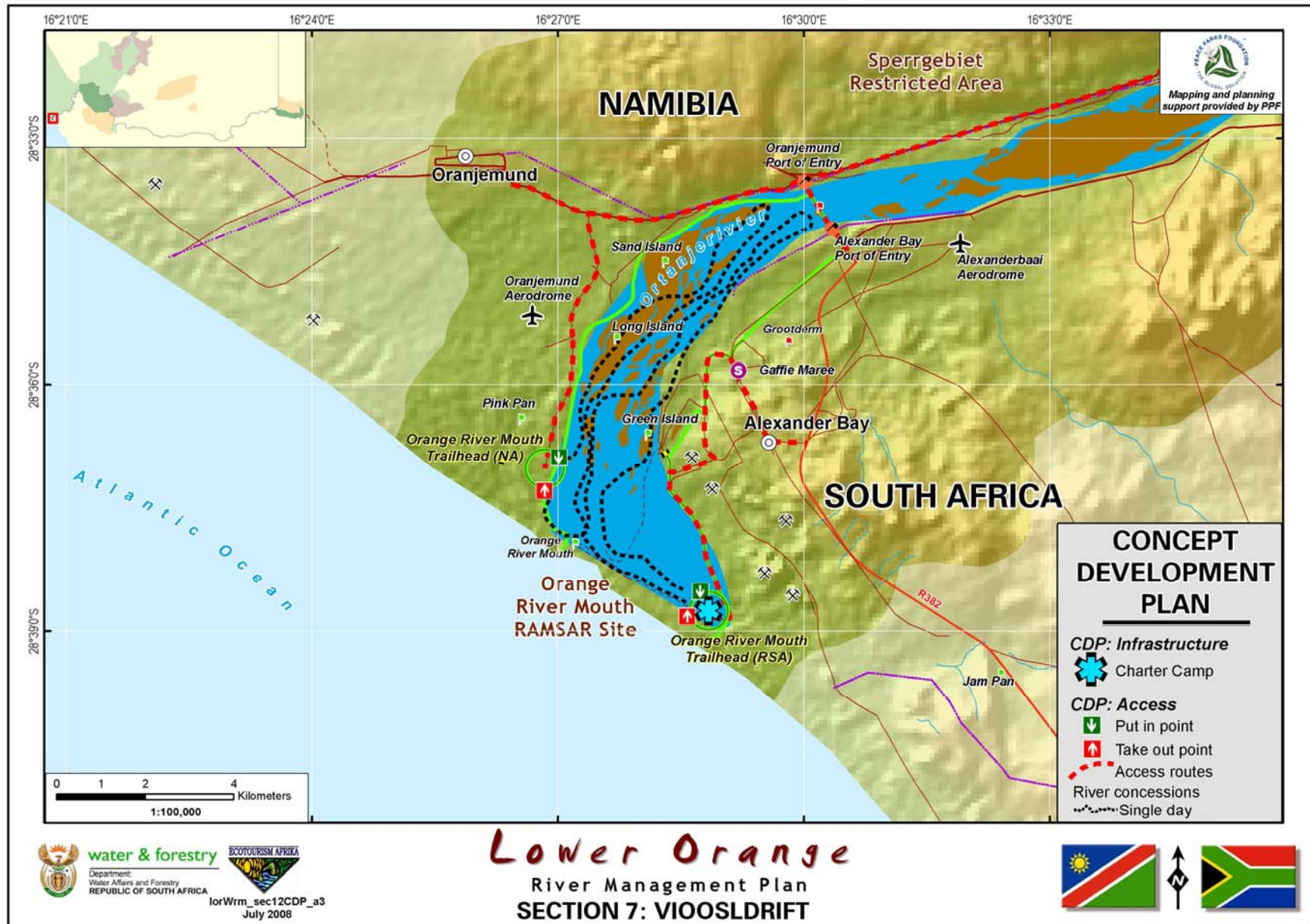
Table 12: River Distances, Section 12 (Oranjemund)

Section	Product	Activity	From	To	Km	Total distance
12	a. Guided river trips	Birding	Oranjemund			9.50
			Oppenheimer Bridge	Orange River Mouth	9.50	
			Alexander Bay			

4.3.12.4 Requisite Actions

The following actions are required to ensure that the CDP for this river section can be achieved:

- Align all development proposals with the Management Plan for the ORMTRS;
- Develop a Beach Camp and Charter concession within the ORMTRS;
- Control 4x4 driving on the sand bar and beach;
- Develop a Charter concession for the Namibian side; and,
- Package these as concessions.



Map 119: CDP, Section 12 (Oranjemund)



Map 120: CDP, Section 12 (Orange River Mouth, Namibia)



Map 121: CDP, Section 12 (Orange River Mouth, South Africa)

4.4 PROPOSED OPERATIONAL FRAMEWORK

The needs and expectations of the various stakeholders (refer section 3.2) determined during the consultative process are reflected in the broad and specific objectives set out in section 4.1. To guide management these are related to four Key Performance Areas (KPA) identified as critical to the attainment of sustainability based on the principle underlying the ecotourism.

To ensure accountability each of these KPAs must be incorporated into a management system aimed at providing collective insight into the broad objectives as set by the stakeholders, as well as the policy framework and guiding principles within which these objectives will be managed, the action plans and programmes to be implemented, and the performance measures or indicators necessary to ascertain whether the objective has been met.

To guide this, the diagram below (*vide* Figure 33) provides a strategic framework towards ensuring accountability within this endeavour to attain sustainability by addressing management responsibility; support; plans and programmes; as well as indicators regarding performance measurement. The model addresses each key performance area separately, yet focuses on the attainment of the objectives for the LORMP. Table 13 summarises the required actions for each river section along with the relevant KPA, role players and stakeholders, support framework (norms and standards; operational guidelines, etc.) within the context of the objectives (broad and specific). Table 14 summarises general actions required to meet these objectives. These tables together with the principles of the process based management system will form the bases for implementation, guided by the TFCA Management Authority.

This operational framework is based on the ISO 9000 Management system aimed at ensuring that needs and expectations are satisfied in a structured and accountable manner, where the objectives and the tables provide for the initial departure point for the compilation of detailed business plans.

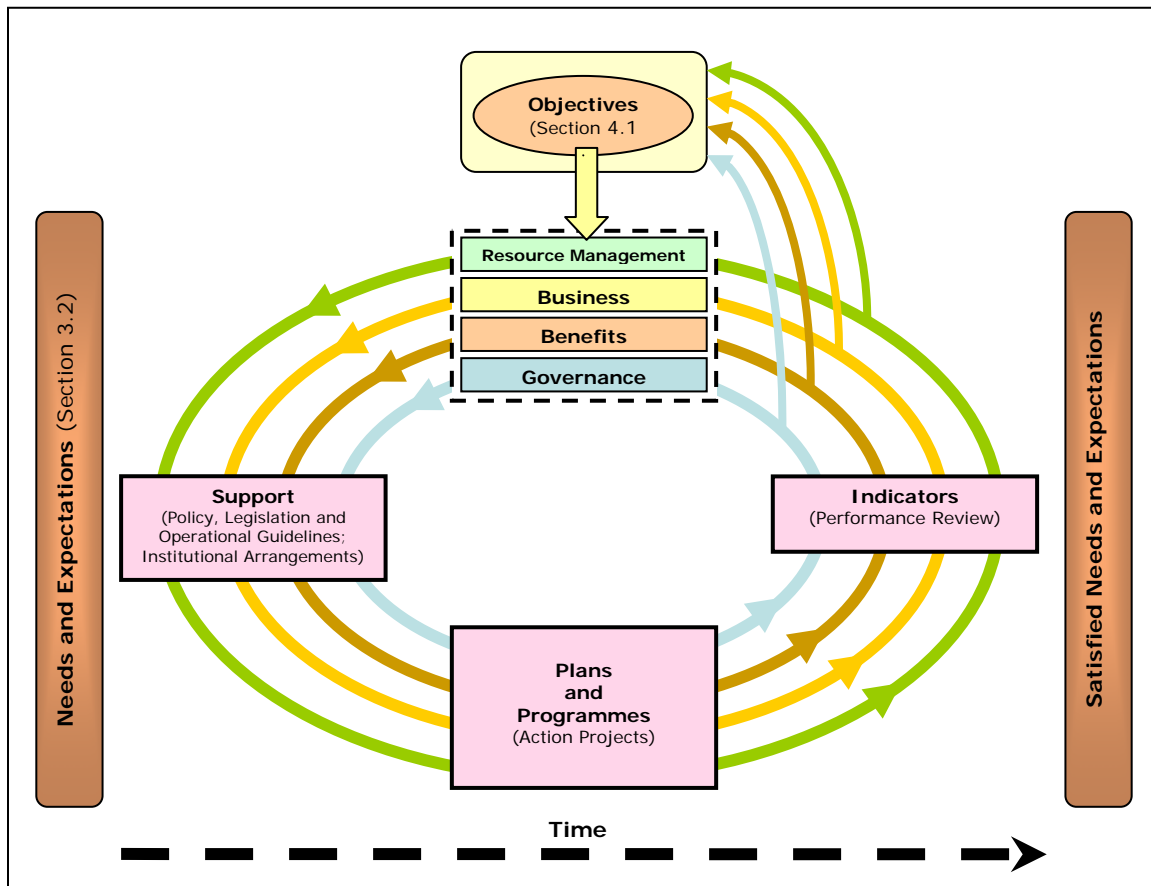


Figure 33: Process Based Management System

Table 13: Operational Framework – Summary of Required Actions for River Sections

River Section	Action	Key Performance Area	Role players and Stakeholders				Support Framework (Policies, Legislation, Norms and Standards, Operational Guidelines etc.)
			Resource Managers	Business/ Users	Community Structures/ Land Owners	ARTP JMB/ TFCA Management Structure	
River Section 1 (Augrabies)	1. Discussions with SANParks to change the product, removal of existing infrastructure in the Gorge, and ensure compliance with industry norms and standards	Resource Management	X			X	APA safety norms and standards
		Business					
	2. Discussions with the Riemvasmaak Community regarding the development of the Blouputsbrug Trailhead, and their participation in a CPPP	Business	X		X	X	PPP Toolkit for Tourism and principles contained in the Namibian concession model
		Benefits					
	3. Prepare a concession agreement between SANParks, the Riemvasmaak Community, and a Private sector operator, with financing through the Community	Business	X	X	X	X	PPP Toolkit for Tourism and principles contained in the Namibian concession model
		Benefits					
	4. Conclude a revenue sharing agreement with the relevant property owners	Business	X		X	X	Pro forma agreement
		Benefits					

River Section	Action	Key Performance Area	Role players and Stakeholders				Support Framework (Policies, Legislation, Norms and Standards, Operational Guidelines etc.)
			Resource Managers	Business/ Users	Community Structures/ Land Owners	ARTP JMB/ TFCA Management Structure	
River Section 2 (Riemvasmaak)	5. Discussions with the Riemvasmaak Community regarding the development of the Bloutputsbrug Trailhead, and their participation in a CPPP	Business	X		X	X	PPP Toolkit for Tourism and principles contained in the Namibian concession model
		Benefits					
	6. Prepare a concession agreement between SANParks, the Riemvasmaak Community, and a Private sector operator, with financing through the Community	Business	X	X	X	X	PPP Toolkit for Tourism and principles contained in the Namibian concession model
		Benefits					
	7. Discussions with the Daberas Farm owner for the full day soft adventure take-out point	Business	X		X	X	Pro forma agreement
		Benefits					
	8. Discussions with SANParks regarding the overnight stop and Kwaaiputs take-out	Business	X			X	Pro forma agreement
		Benefits					
	9. Conclude a revenue sharing agreement with the relevant property owners	Business	X		X	X	Pro forma agreement
		Benefits					

River Section	Action	Key Performance Area	Role players and Stakeholders				Support Framework (Policies, Legislation, Norms and Standards, Operational Guidelines etc.)
			Resource Managers	Business/ Users	Community Structures/ Land Owners	ARTP JMB/ TFCA Management Structure	
River Section 3 (Onseepkans)	10. Discussions with the owners of Raap-en-Skraap farm for the development of the Adventure Hub	Business			X	X	Pro forma agreement
		Benefits					
	11. Discussions with the owners of Byna-Bo farm and the Onseepkans Mission for the development of trailheads at these points	Business			X	X	Pro forma agreement
		Benefits					
	12. Discussions with the owners of property on which the Skuitdrift, Rock Island, and Beenbreek overnight camps are to be developed	Business			X	X	Pro forma agreement
		Benefits					
	13. Conclude a revenue sharing agreement with the relevant property owners	Business			X	X	Pro forma agreement
		Benefits					
	14. Package this as a single river concession, and source an operator	Business		X	X	X	PPP Toolkit for Tourism and Namibian Concession Policy APA safety and environmental management norms and standards
		Benefits					

River Section	Action	Key Performance Area	Role players and Stakeholders				Support Framework (Policies, Legislation, Norms and Standards, Operational Guidelines etc.)
			Resource Managers	Business/ Users	Community Structures/ Land Owners	ARTP JMB/ TFCA Management Structure	
River Section 4 (Oranjevalle)	15. Discussion with the Onseepkans Community regarding the development of Coboop as a training facility	Business			X	X	Wildlife College, Orpen Tourism College, Graaff Reinette Operational Frameworks THETA and SAQA APA norms and standards
		Benefits					
	16. Discussions with trainers and training authorities regarding possible programmes and recognition	Business		X	X	X	Wildlife College, Orpen Tourism College, Graaff Reinette Operational Frameworks THETA and SAQA APA norms and standards
		Benefits					
	17. Discussions with the Peace Parks Foundation for possible involvement due to their experience and knowledge at the Wildlife College and Tourism College	Business		X		X	Wildlife College, Orpen Tourism College, Graaff Reinette Operational Frameworks THETA and SAQA APA norms and standards
		Benefits					
	18. Undertake a cultural mapping exercise with the Onseepkans and Pella communities	Benefits			X	X	Cultural Resource Management Guidelines (DEAT) ICOMOS and Burra Charters
	19. Packaging of this river section as a concession	Business		X	X	X	PPP Toolkit for Tourism and Namibian Concession Policy APA safety and environmental management norms and standards
		Benefits					
	20. Conclude a revenue sharing agreement with the relevant property owners	Business			X	X	Pro forma agreement
		Benefits					

River Section	Action	Key Performance Area	Role players and Stakeholders				Support Framework (Policies, Legislation, Norms and Standards, Operational Guidelines etc.)
			Resource Managers	Business/ Users	Community Structures/ Land Owners	ARTP JMB/ TFCA Management Structure	
River Section 5 (Pella)	21. Discuss with, and compile agreement for the various landowners on the Namibian side for access, use and development to enable the development of the Bondelswarts cultural experiences	Business			X	X	Pro forma agreement
		Benefits					
	22. Discuss with the Pella, Witbank, and Goodhouse communities for the development of a joint concession on the South African side	Business			X	X	PPP Toolkit for Tourism and principles of the Namibian concession model
		Benefits					
	23. Packaging of these river sections as individual concessions	Business		X	X	X	PPP Toolkit for Tourism and principles of the Namibian concession model
		Benefits					
	24. Conclude a revenue sharing agreement with the relevant property owners	Business			X	X	Pro forma agreement
		Benefits					
River Section 6 (Goodhouse)	25. Discussions with the PWC regarding establishing a transfrontier conservation area associated with the proposed Violsdrift Dam	Resource Management	X			X	SADC Revised Protocol on Shared Watercourses. SADC Framework for Transfrontier Conservation Areas SADC Protocol on Wildlife Conservation and Law Enforcement
		Governance					
	26. Discussions with the respective landowners regarding access to and use of land for the requisite developments e.g. River camp at Henkries, guided tour of date plantation, trailheads etc.	Business			X	X	Pro forma agreement
		Benefits					
	27. Packaging of these river sections as individual concessions	Business		X	X	X	PPP Toolkit for Tourism and principles of the Namibian concession model
		Benefits					
	28. Conclude a revenue sharing agreement with the relevant property owners	Business			X	X	Pro forma agreement
		Benefits					

River Section	Action	Key Performance Area	Role players and Stakeholders				Support Framework (Policies, Legislation, Norms and Standards, Operational Guidelines etc.)
			Resource Managers	Business/ Users	Community Structures/ Land Owners	ARTP JMB/ TFCA Management Structure	
River Section 7 (Violsdrift)	29. Develop a river access record keeping system	Business		X	X	X	Ezemvelo KZN Wildlife 's Mountain Register
	30. Develop a standard for river use for this section of the river	Resource Management	X	X	X	X	APA norms and standards
		Business					
	31. Negotiate and develop trailheads at respective places	Business		X	X	X	Pro forma agreement
		Benefits					
	32. Conclude a revenue sharing agreement with the relevant property owners	Business			X	X	Pro forma agreement
		Benefits					
	River Section 8 (Richtersveld WHS)	33. Discussions with the respective landowners regarding access to and use of land for the requisite developments e.g. trailhead at Modderdrift; Klipneus Island; wilderness camp sites etc.	Business			X	X
Benefits							
34. Ensure that access beyond Peace-of-Paradise is restricted		Resource Management	X		X	X	Pro forma agreement
		Business					
35. Packaging of this river section as three individual concessions		Business	X	X	X	X	PPP Toolkit for Tourism and principles of the Namibian concession model
		Benefits					
36. Conclude a revenue sharing agreement with the relevant property owners		Business			X	X	Pro forma agreement
		Benefits					
River Section 9 (Aussenkehr)	37. Develop a river access record keeping system	Business		X	X	X	Ezemvelo KZN Wildlife 's Mountain Register
	38. Develop a standard for river use for this section of the river	Resource Management		X	X	X	APA norms and standards
		Business					
	39. Negotiate and develop trailheads at respective places	Business			X	X	Pro forma agreement
		Benefits					
	40. Conclude a revenue sharing agreement with the relevant property owners	Business			X	X	Pro forma agreement
		Benefits					

River Section	Action	Key Performance Area	Role players and Stakeholders				Support Framework (Policies, Legislation, Norms and Standards, Operational Guidelines etc.)
			Resource Managers	Business/ Users	Community Structures/ Land Owners	ARTP JMB/ TFCA Management Structure	
River Section 10 (ARTP)	41. Discussions between the Richtersveld CPA and Namibian Government as landowners regarding access to and use of land and existing facilities for the requisite developments e.g. Adventure Hub at Gamkab Luxury River safari camps at Tattasberg, Bo-Plaats and Nuab, wilderness camp sites along the river, and Charter Camp etc.	Business	X		X	X	Pro forma agreement
		Benefits					
	42. Develop Gamkab Gate as a control measure for the southern portion of the /Ai/Ais Hot Springs Game Park	Resource Management	X			X	MET policies
		Business					
	43. Restrict access at Gamkab Gate	Resource Management	X			X	MET policies
		Business					
	44. Packaging of this river section components as one concession in terms of MET's Concessioning Policy	Business	X	X	X	X	PPP Toolkit for Tourism and Namibian Concession Policy
		Benefits					
	45. Include this river section's CDP in the ARTP tourism development planning process	Resource Management	X			X	ARTP JMP
	46. Conclude a revenue sharing agreement with the relevant property owners	Business			X	X	Pro forma agreement
		Benefits					

River Section	Action	Key Performance Area	Role players and Stakeholders				Support Framework (Policies, Legislation, Norms and Standards, Operational Guidelines etc.)
			Resource Managers	Business/ Users	Community Structures/ Land Owners	ARTP JMB/ TFCA Management Structure	
River Section 11 (Sperrgebiet)	47. Discuss with the Richtersveld Community the possibility of using the two camps to unlock the ecotourism potential of the river	Business			X	X	Pro forma agreement PPP Toolkit for Tourism and Namibian Concession Policy
		Benefits					
	48. If possible, assess the developmental requirements of these camps prepare detailed development plans and seek funding to use as community equity	Business			X	X	PPP Toolkit for Tourism and Namibian Concession Policy
		Benefits					
	49. Package the Stofbakkies site as a potential concession	Business		X	X	X	PPP Toolkit for Tourism and Namibian Concession Policy
		Benefits					
River Section 12 (Oranjemund)	50. Align all development proposals with the Management Plan for the ORMTRS	Resource Management	X			X	ORMTRS Management Plan
	51. Develop a Beach Camp and Charter concession within the ORMTRS	Business	X		X	X	Management Plan for the ORMTRS; PPP Toolkit for Tourism and Namibian Concession Policy
		Benefits					
	52. Control 4x4 driving on the sand bar and beach	Resource Management	X				ORMTRS Management Plan
	53. Develop a Charter concession for the Namibian side	Business	X		X	X	Namibian Concession Policy
		Benefits					
54. Package these as concessions	Business	X	X	X	X	PPP Toolkit for Tourism and Namibian Concession Policy	
	Benefits						

Table 14: Operational Framework – Summary of General Actions

River Section	Action	Key Performance Area	Role players and Stakeholders				Support Framework (Policies, Legislation, Norms and Standards, Operational Guidelines etc.)
			Resource Managers	Business/ Users	Community Structures/ Land Owners	Government/ Management Structure	
General	1. Develop pro forma agreements for traversing; development sites; revenue sharing, concessions etc.	Business	X		X	X	PPP Toolkit for Tourism and Namibian Concession Policy
		Benefits					
	2. Initiate a yellow fish conservation programme for the LOR	Resource Management	X	X	X	X	DTEC and MET biodiversity conservation policies
	3. Discuss operational rules with PWC, specifically releases from dams	Resource Management				X	SADC Revised Protocol on Shared Watercourses SADC Framework for Transfrontier Conservation Areas SADC Protocol on Wildlife Conservation and Law Enforcement
		Business					
		Governance					
	4. Initiate a riparian vegetation conservation programme	Resource Management	X		X	X	Joint Invasive Alien Species Initiative between Namibia (MET, SPAN) and South Africa (Working for Water, DTEC)
	5. Develop rules and decision making criteria for mining and other impacts and alterations to the beds, banks, course and characteristics of LOR within the shared resource area (e.g. 4X4 off road driving)	Resource Management	X			X	Water and environmental authorisations
6. Establish institutional arrangements with emergency and rescue response service providers	Business	X	X	X	X	APA safety norms and standards	
7. Develop and implement a marketing strategy for the LOR	Business Benefits	X	X	X	X	2010 TFCA marketing strategies	
8. Ensure that the required governance and institutional arrangements are established to implement the LORMP based on the actions required within a process based management system	Governance	X	X	X	X	ARTP Treaty SADC Revised Protocol on Shared Watercourses Outcomes of the ICDPs	

4.5 INSTITUTIONALISATION

The vision for the TFCA amongst stakeholders in Namibia and South Africa is to work together to establish and sustain the LOR Eco-region as a world leading arid conservation and desert tourism region.

To achieve this, the following institutional principles must be adhered to:

- Improve accountability of the TFCA's governance structures by separating its from the structures responsible for implementation;
- Coordination of both governance and implementation structures should be sought;
- Pace of implementation should be determined by capacity of each partner country to participate in collaborative efforts; and,
- TFCA institutions, bilateral and country specific, need to be representative of key stakeholder groups (i.e. government, land owners, resource managers and tourism sector).

The matters on which the two countries need to collaborate, include, *inter alia*:

- *Natural and cultural resource management* of shared resources (e.g. water, fauna, flora, etc.) across common boundary to sustain biodiversity and cultural hegemony at landscape level;
- *Tourism and infrastructure development*: jointly plan, establish, develop, and market the LOR region as a world class desert tourism destination, within which there are tourism routes and activities linking its diverse attractions and facilities for easy tourism flows across boundaries; and,
- *Community capacitation*: strengthening cultural ties across borders, opening up socio-economic opportunities in community based natural and cultural resource management and eco-tourism.

Due to the integrated nature of the LOR management planning process, addressing issues in both Namibia and South Africa, it is imperative that this plan be integrated into the country specific ICDPs and be aligned with the transfrontier conservation planning initiatives within the ARTP JMB.

This will allow for numerous aspects to be achieved, such as:

- Joint decision-making,
- Linkages with other transfrontier institutions, such as the PWC, to be addressed,
- Operational and financial controls to be implemented, and,
- Measures to achieve enforcement regarding aspects such as industry norms and standards regarding safety, training and skills development, as well as equity.

Joint decision-making is critical to ensure that both countries collectively strive towards the achievement of common goals, cognizant of the needs and expectations of the other country. To reduce duplication within the institutional arrangements it is recommended that a single overarching structure be established to address all the river sections, thereby ensuring a universal standard for all aspects of operation throughout. Within each individual river section smaller nuances and site specific aspects can be addressed, similar to the conservation nodes that can be established along ecological corridors.

A single overarching structure will also allow for effective linkages to be established between the PWC and the TFCA structures, as well as with other structures, and will remove problems associated with bi-lateral co-operation between spheres of government not specifically tasked with international co-operation through bi-lateral agreements.

Operational and financial controls will be more effectively implemented if the controls are implemented by a single rather than a multitude of bodies varying in interpretation, application, approval and monitoring procedures.

Compliance management and monitoring is critical if regional co-operation, growth and development is the objective. Through a single TFCA structure, with overarching responsibility for all twelve river sections, it is believed that effective compliance to industry norms and standards can be achieved, where a single representative for the industry reports on the management of compliance to prescribed standards by the

individual operators along the entire length of the LOR. The industry, through representative structures such as the APA, will effectively become self regulatory, and the TFCA's joint management structure will be tasked with enforcement, contract and concession management and not the policing of individual operators and activities.

The rationale for the institutional proposal is that each of the countries has certain aspects that only pertain to that country, and that these country specific issues need not be collectively discussed. Similarly, issues can be discussed within specific communities of interest, within and between countries. These issues do not need to be discussed within the TFCA or country specific collective groupings.

In this way, efficiency can be promoted, since only matters of collective interest are discussed collectively, yet actions can be coordinated between specific groups and between the countries.

The institutional structure to co-ordinate efforts aimed at unlocking the ecotourism potential of the LOR specifically, can also assist in unlocking the economic and tourism potential of the region generally.

The proposed institutional structure for the implementation of the LORMP is discussed below and provided in Figure 34.

4.5.1 Conservation Coordination Committee

To effectively unlock the ecotourism potential of the LOR, it is critical that the resources, both natural and cultural, be well managed, and to achieve this it is recommended that a conservation committee be established within each country. These committees will meet on a country specific basis coordinating discussions within each sovereign country, yet aligning these discussions with inputs from the other country. A Conservation Coordination Committee needs to be established between the two countries to align joint matters and conservation initiatives.

In Namibia this conservation committee will consist of the MET management from Ai-Ais Hot Springs Game Park and the Sperrgebiet, management representatives from the GFRCC, community conservancies, and private sector conservation initiatives.

In South Africa the conservation committee will consist of the managers from the Richtersveld, Namaqua and AFNP, Richtersveld WHS, managers from the ORM and NNR, and managers of the communal and private conservation initiatives, as and when they attain formal proclamation status.

4.5.2 Landowners Coordination Committee

Since ownership is the most inalienable right, only limited by legislation, the landowners within this area need to co-ordinate and align the various initiatives that take place on their specific land. Recognising that the land ownership within each country varies, and that the ownership structures change over time it is important that a Landowners Coordination Committee be established between the two countries to ensure that strategies, programmes and plans are aligned. Within each country landowner committees need to be established to discuss country specific issues pertaining to land within the shared resource area along the river or within the TFCA.

4.5.3 Ecotourism Coordination Committee

Unlocking the tourism and economic potential of the TFCA region is essential if sustainability is to be achieved, and the principles underlying ecotourism as an approach to sustainable tourism development have been proven to be essential in achieving this. By having a single Ecotourism Coordination Committee efforts within both countries can be aligned and coordinated, while the individual countries can still undertake country specific programmes to assist stakeholders in the region, either through funding, grants, training and skills development, and the development of tourism routes, products and packages, in a coordinated and aligned manner. These country specific committees can have sub-committees tasked with

aspects such as river industry, 4x4 products, game viewing, birding, accommodation establishments, training etc.

4.5.4 Government Coordination Committee

Co-operative government is an aspect that both Namibia and South Africa ascribe to, yet experience has shown that this is difficult to achieve in the absence of a specific project. It is envisaged that this proposed TFCA will serve as the catalyst to achieve intergovernmental co-ordination, as well as cross border collaboration. Within each country an Inter-Governmental Forum needs to be established to address these country specific issues, while the Government Coordination Committee will ensure that the countries collectively achieve regional goals regarding growth and development. This approach will assist in overcoming the problems faced by the signatories to the Twinning Agreement, as well as the management of the ORMTRS.

4.5.5 International and Country Coordinators

To assist the country specific committees with their planning and co-ordination aimed at effective participation within each country and between the two countries it is recommended that Country Coordinators be appointed for both Namibia and South Africa, and that an International Coordinator be appointed to align the Bi-lateral discussions. These coordinators will assist the International Coordinator in the compilation of the Bi-lateral agendas and serves as conveners for the country specific committees. The International Coordinator should be supported by a Secretariat, who can provide logistical support to the Country Coordinators as well.

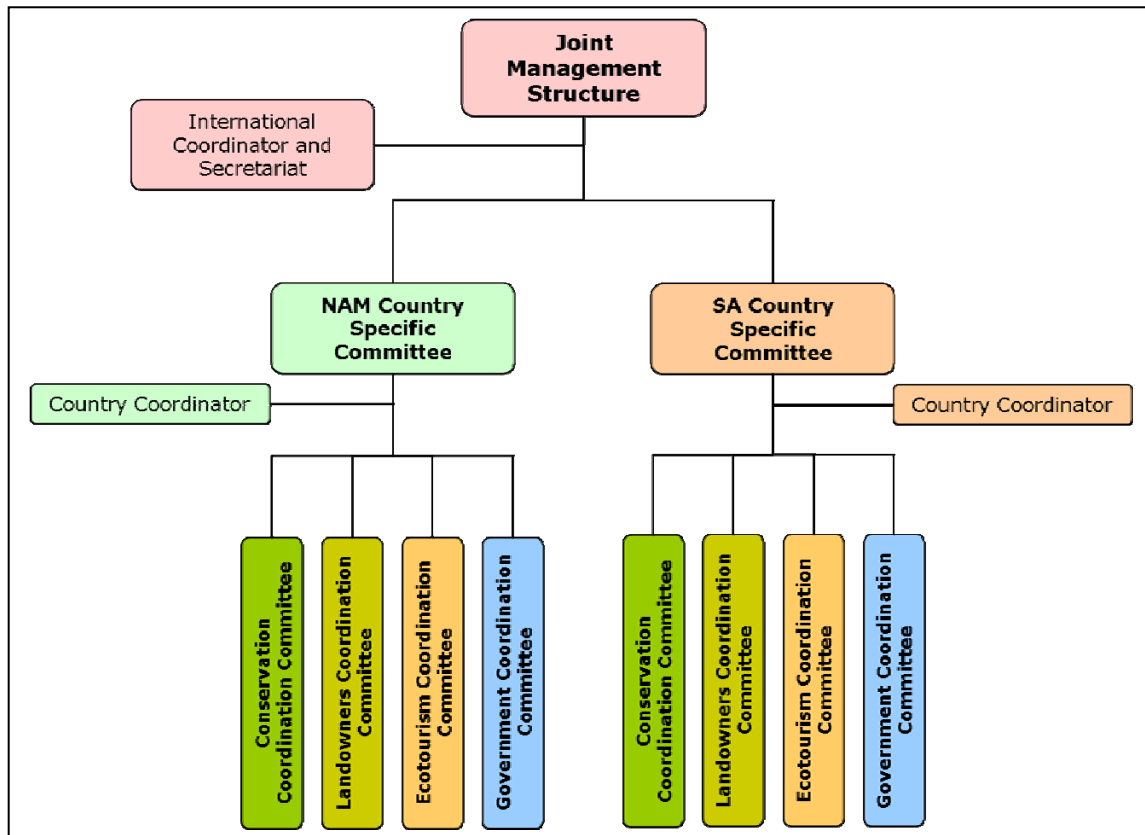


Figure 34: Institutional Proposal

REFERENCES

- Africa Water Task Force.** 2002. Water and Sustainable Development in Africa: An African Position Paper. International Water Management Institute, Pretoria, August 2002
- /Ai-/Ais-Richtersveld Transfrontier Park Joint Management Board (ARTP JMB).** 2005. Integrated Regional Tourism Plan. November 2005
- Akweenda, S.** 1997. "International Law and the Protection of Namibia's Territorial Integrity." Boundaries and Territorial Claims. Kluwer Law International, The Hague, 1997
- ARTP JMB.** 2006. Draft Joint Management Plan
- Burke, A.** 2005. Best Practice Guidelines for Minimising Impacts on the Flora and Southern Namib. EnviroScience and Namibian Nature Foundation, Windhoek, 52 pp.
- Department of Tourism, Environment and Conservation (DTEC).** 2008. Volume II. The Orange River Mouth Nature Reserve Management Framework, Draft.
- Myburgh, E.** 2002. Factors that Influence Adult Blackfly (Diptera: Simuliidae) Survival along the Lower Orange River, South Africa. WRC Report No. 1019/1/03, 2002
- Orange-Senqu River Commission (ORASECOM).** 2006. "Integrated Water Resources Management Plan." Review of Surface Water Resources, Draft. October 2006.
- ORASECOM.** 2008. Orange-Senqu River Basin Preliminary Transboundary Diagnostic Analysis, Version 18. January 2008
- Peace Parks Foundation.** 2002. Status Report Existing and Potential Transfrontier Conservation Areas in the SADC Region. August 2002
- Permanent Water Commission (PWC).** 2005a. "Pre-feasibility Study into Measures to improve the Management of the Lower Orange River and to provide for future developments along the Border between Namibia and South Africa." Main Report. Department of Water Affairs and Forestry (DWAF) Ref. PB D000/00/4703, September 2005.
- PWC.** 2005b. "Pre-feasibility Study into Measures to improve the Management of the Lower Orange River and to provide for future developments along the Border between Namibia and South Africa." Hydrology, Water Quality and Systems Analysis, Vol A. DWAF Ref. PB D000/00/4303, February 2005.
- PWC.** 2005c. "Pre-feasibility Study into Measures to improve the Management of the Lower Orange River and to provide for future developments along the Border between Namibia and South Africa." Hydrology, Water Quality and Systems Analysis, Vol B. DWAF Ref. PB D000/00/4303, February 2005.
- PWC.** 2005d. "Pre-feasibility Study into Measures to improve the Management of the Lower Orange River and to provide for future developments along the Border between Namibia and South Africa." Legal, Institutional, Water Sharing, Cost Sharing, Management & Dam Operation. DWAF Ref. PB D000/00/4603, March 2005.
- PWC.** 2005e. "Pre-feasibility Study into Measures to improve the Management of the Lower Orange River and to provide for future developments along the Border between Namibia and South Africa." Specialist Report on the Determination of the Preliminary Ecological Reserve on a Rapid Level of the Orange River Estuary. DWAF Ref. PB D000/00/4503, February 2005.
- PWC.** 2005f. "Pre-feasibility Study into Measures to improve the Management of the Lower Orange River and to provide for future developments along the Border between Namibia and South Africa." Specialist Report on the Environmental Flow Requirements - Riverine. DWAF Ref. PB D000/00/4503, February 2005.

PWC. 2005g. “Pre-feasibility Study into Measures to improve the Management of the Lower Orange River and to provide for future developments along the Border between Namibia and South Africa.” Environmental Assessment of the Proposed Dam Sites on the Orange Rvier. DWAF Ref. PB D000/00/4503, March 2005.

Republic of Namibia and Republic of South Africa. 2003. Treaty between the Government of the Republic of Namibia and the Government of the Republic of South Africa on the Establishment of the [!Ai-!Ais/Richtersveld] Transfrontier Park

Republic of Namibia. 2004. Water Resource Management Act (Act No. 24 of 2004)

Sander, M. 2001. Master Thesis on Development and Resource Management through Tourism in the Context of the TRANSFORM-Project in the Richtersveld, South Africa

SANParke. 2001. “Kultuurerfenis: Hede and Verlede.” Omgewingsopleidingshandleiding vir die Augrabieswaterval Nasionale Park en Omgewing. SANParke, Pretoria

SANParks. 2006a. Management Plan for Corporate Direction and Support to the National Park System. SANParks, Pretoria, October 2006

SANParks. 2006b. “Co-ordinated Policy Framework.” Governing Park Management Plans. SANParks Pretoria, October 2006

SANParks. 2006c. “Augrabies Falls National Park.” Park Management Plan. SANParks Pretoria, October 2006

SANParks. 2006d. “[!Ai-!Ais/Richtersveld Transfrontier Park.” Richtersveld Nasionale Park Bestuurs- en Ontwikkelings Plan. SANParks Pretoria, October 2006

Southern African Development Community (SADC). 1999. Protocol on Wildlife Conservation and Law Enforcement.

SADC. 2000. Revised Protocol on Shared Watercourses.

SADC. 2005. Regional Water Policy. August 2005

SADC. 2007. “Framework for Transfrontier Conservation Areas.” Draft Final Issues and Options Report. Second Draft, March 2007

Swedish International Donor Agency. Every River Has Its People Newsletter

Thornton, M. Taking Charge! The Richtersveld Community Conservancy: the first of its kind in South Africa (web article)