

2 CHAPTER 2 : OVERVIEW OF THE MZIMVUBU TO MBASHE ISP AREA

This chapter provides a general overview of the whole of the Mzimvubu to Mbashe ISP area. The key areas in the NWRS have been used for the more detailed situation assessment. This detailed information is provided for each key area separately in Chapters 5 to 8.

2.1 LOCATION AND DESCRIPTION OF THE ISP AREA

The Mzimvubu to Mbashe ISP area forms a major part of the Mzimvubu to Keiskamma Water Management Area (WMA 12). The area is bounded in the west by the Kei River catchment, in the east by the Mvoti to Mzimkulu WMA, in the north west by the Upper Orange WMA and in the north by Lesotho. Although the ISP area shares an international boundary with Lesotho, there are no shared watercourses between them (DWAF: 1999) ⁽¹²⁾. The locality map of the Mzimvubu to Mbashe ISP area is provided in **Figure 2.1**. The ISP for the Amatole –Kei catchments which is part of WMA 12 is available separately.

The Mzimvubu to Mbashe ISP area has been divided into four key areas for reporting purposes, the Mbashe, Mtata, Mzimvubu and Pondoland key areas (often referred to as the Wild Coast) (see **Figure 2.2**). For the sake of consistency, these areas were chosen to be the same as those used in the NWRS and are referred to as key areas.

The descriptions of these key areas are as follows:

- ❑ The Mzimvubu key area corresponds with the Mzimvubu River catchment. The Mzimvubu River key area comprises the T30 secondary catchment.
- ❑ Pondoland key area comprises the T60 secondary catchment and includes all the coastal rivers east of the Mzimvubu catchment. This key area is known in the NWRS as the Wild Coast. However the Wild Coast runs from the Kei River mouth to the Mzimvubu River mouth. In order to avoid confusion the ISP has used the name Pondoland for the key area instead of the Wild Coast. The T40 and T50 secondary catchments, which make up the rest of the primary catchment, fall in the Mvoti to Mzimkulu WMA.
- ❑ The Mtata key area comprises the Mtata River Catchment and the coastal rivers between the Mbashe and the Mzimvubu rivers. The Mtata River key area comprises only the T20, T70 and T80 secondary catchments.
- ❑ The Mbashe key area includes the secondary catchments of the Mbashe and coastal areas between the Mbashe and Kei rivers. The Mbashe River key area comprises the T10 and T90 secondary catchments.



Figure 2.1: Mzimvubu to Mbashe ISP area in relation to the Mzimvubu to Keiskamma WMA

2.2 PHYSICAL CHARACTERISTICS

2.2.1 Topography and Rivers

The topography of the Mzimvubu to Mbashe ISP area is shown in **Figure 2.2**. The Mzimvubu River is by far the largest river in the ISP area and has a catchment area of 19 852 km². The Mzimvubu and its four main tributaries, the Tsitsa, Tina, Mzintlava and Kinira Rivers, have their headwaters in the Drakensberg Mountains along the border with Lesotho. The main Mzimvubu River flows through deep gorges across the coastal plain before discharging into the Indian Ocean at Port St Johns. The Mzimvubu River is the largest undeveloped river in South Africa.

The Pondoland key area (T60) which rises in the coastal strip between the Mzimvubu River Basin and the north-eastern boundary of the Mzimvubu to Keiskamma WMA, has rivers and estuaries of high conservation value (DWAF: 2004) ⁽²⁵⁾. The Pondoland key area includes the Mkambati Nature Reserve, a highly sensitive ecological area.

The Mtata River rises in the foothills of the Drakensberg Mountains at an altitude of about 1 600 m amsl and flows through the rugged topography of the 60 km wide coastal strip to the sea.

There are several small coastal catchments (T70, T80, T90) situated between the catchments of the main rivers and the coast. The Mngazi, Xura and Xinira rivers have unspoiled estuaries with high conservation status.

The Mbashe River has its headwaters in the mountains of the southern Drakensberg at an altitude of about 2 300 m amsl, and flows across the plateau in the central portion of the catchment before entering deeply incised valleys and discharging into the Indian Ocean (see **Figure 2.2**).

2.2.2 Geology and soils of the catchments

The predominant strata in the Mzimvubu to Mbashe ISP area consist of shales, mudstones and sandstones of the Karoo Sequence with some localised intrusions of dolerite dykes and sills. Basaltic lavas of the Drakensberg Formation occur in the upper parts of the Mzimvubu catchment (T33B, T34A to T34C, T34E and T35A) and small patches of Dwyka Tillite occurs in the lower part of the Mzimvubu catchment (T36B) and the central portion of the Pondoland key area (T60A, T60C, T60G, T60J and T60K). Sandstones outcrop locally along the Pondoland coast (T60). These dominant strata have limited water bearing capacity. **Figure 2.3** provides the geology of the Mzimvubu to Mbashe ISP area.

As a result of the predominant geological strata as well as the climate, the soils of the ISP area can be categorised into four main groups:

- ☐ Moderately deep to deep clay soils on the steep slopes of the Drakensberg along the Lesotho border;
- ☐ Moderately deep to deep clayey loams on the steep slopes of the foothills of the Drakensberg;
- ☐ Moderately deep to deep clayey loams in undulating to steep terrain along the majority of the coast of the Mbashe and Mtata key areas; and
- ☐ Moderately deep to deep sandy loams in undulating terrain in the remainder of the ISP area.

Figure 2.4 presents the soils map of the Mzimvubu to Mbashe ISP area. It is important to note that most of these soils are prone to erosion due to their naturally dispersive nature. Overgrazing exacerbates the erosion problems in most parts of the former Transkei area.

Little information exists regarding soil potential for large parts of the Mbashe, Mtata and upper parts of the Mzimvubu River catchments. Where the information exists, it is evident that most of the soils are either poorly or completely unsuited for arable agriculture but suited for grazing and forestry. There is significant commercial forestry in the Mzimvubu and Mtata River catchments. Only small areas suitable for arable agriculture are to be found in the study area.

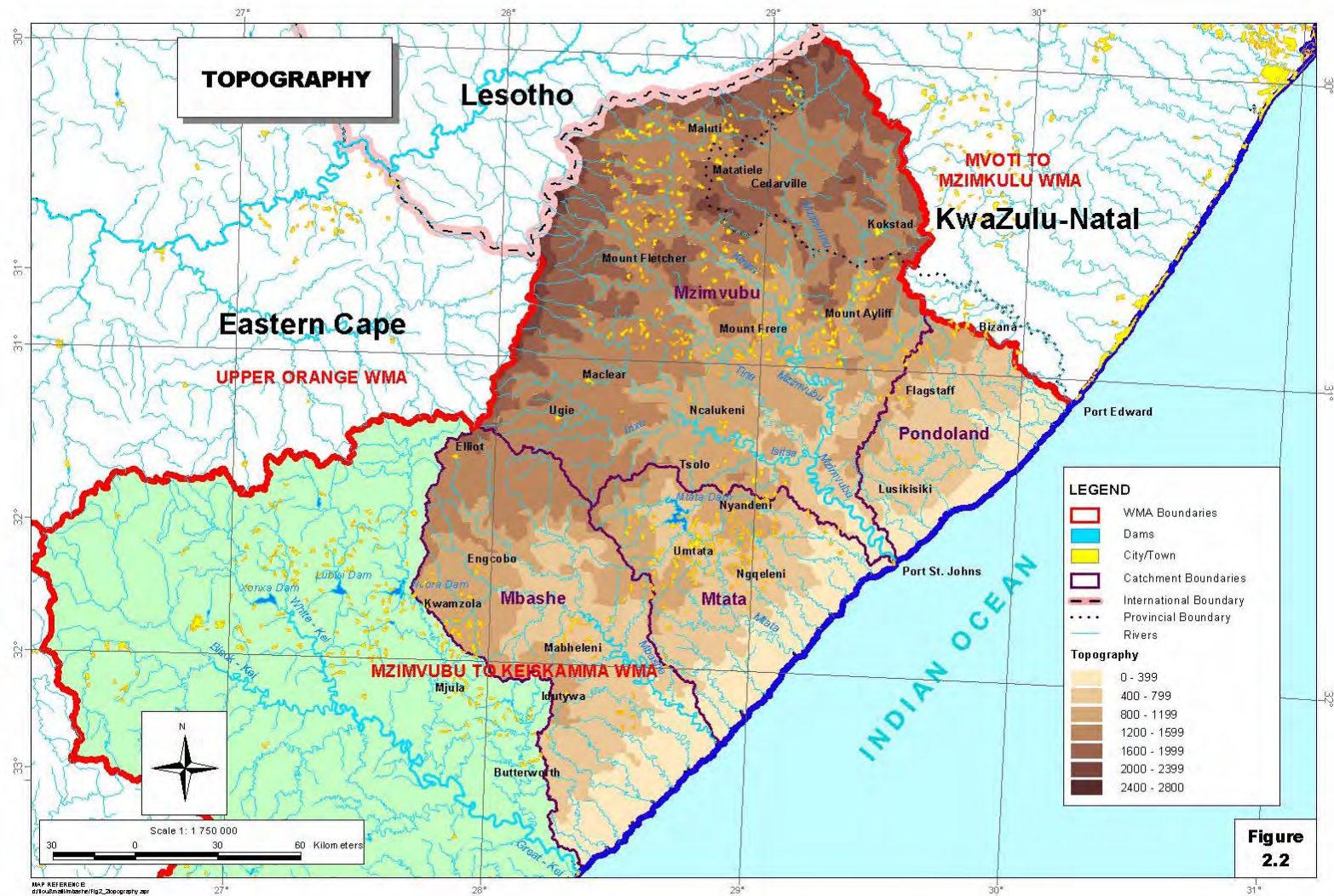


Figure 2.2: Topography map of the Mzimvubu to Mbashe ISP area

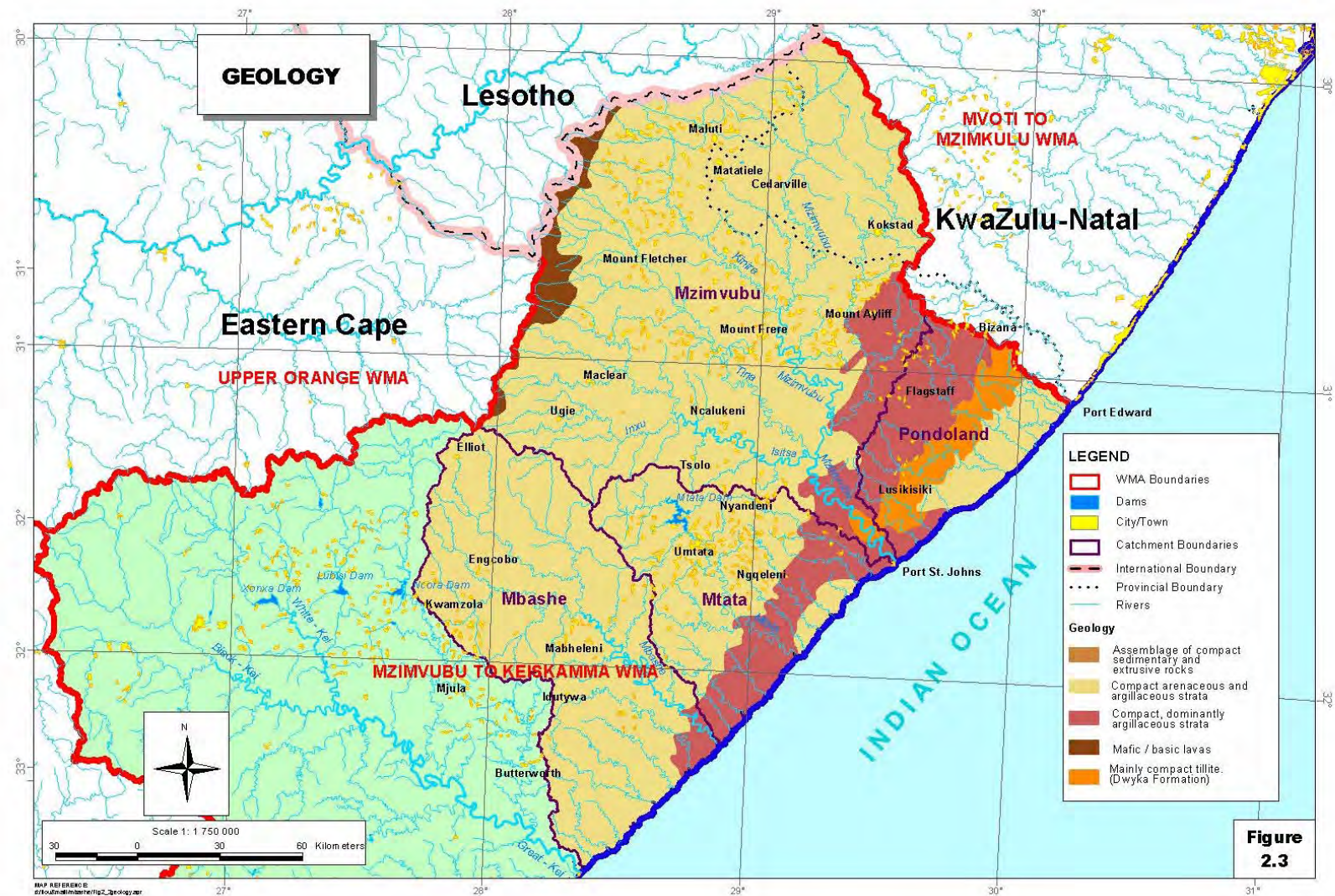


Figure 2.3: Geology map of the Mzimvubu to Mbashe ISP area



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2.2.3 Climate and rainfall

The climate and temperature variations of the Mzimvubu to Mbashe ISP area are closely related to elevation and proximity to the coast. The study area experiences a mild, temperate climate along the coast to more extreme conditions inland with most rainfall occurring during the summer months (DWAF: 1999) ⁽¹²⁾. Temperature variations along the coast are less pronounced than inland where frost (and sometimes snow) is regularly experienced during the winter months, while temperatures could exceed 40°C in summer.

Figure 2.5 provides a precipitation map. Annual rainfall is highest in the coastal regions in the Pondoland key area where it ranges between 1000 mm and 1500 mm. The mean annual precipitation in the Mzimvubu key area ranges from between 600 mm to 800 mm in the upper areas of Matatiele and Maluti, which are situated in the foothills of the Drakensberg Mountains. Mean precipitation for the rest of the Mzimvubu key area decreases from the coast towards the inland and ranges between 1000 mm and 800 mm. There are local high rainfall areas in the headwaters of the Mtata River and the upper parts of the Mbashe key area (see **Figure 2.5**).

2.2.4 Vegetation

The vegetation varies from lush coastal forests to sparse grassland with savannah grassland being the dominant vegetation type in most parts of the study area. Patches of thicket and bushland occur in the lower parts of all the key areas. Indigenous forests are found mainly in the coastal areas. Small patches of indigeneous forest are also found in the upper parts of the Mtata key area. The majority of commercial afforestation (mainly pinus species) lies in the upper reaches of the Mbashe and Mtata key areas and the western parts of the Mzimvubu key area (T35) (see **Figure 2.6**).

2.2.5 Land use

Most of the land-use activity in the former Transkei area is based on subsistence and livestock farming. A very large area of the upper and central parts of the former Transkei can be classified as degraded, mainly as a result of overgrazing, resulting in severe erosion (see **Figure 2.6**).

The land use of the study area (see **Figure 2.7**) can be subdivided into the following:

- ☐ Subsistence farming in the former Transkei is mainly for maize, vegetables and cattle farming.
- ☐ Commercial agriculture, mainly livestock farming taking place in the upper parts of the Mbashe key area around Elliot, the western parts of the Mzimvubu key area around Ugjie and Maclear and in the whole of the Mzimvubu key area that is part of the KwaZulu - Natal Province. There is significant commercial livestock farming in the Matatiele, Kokstad and Maluti areas of the Mzimvubu key areas.
- ☐ Commercial forestry is taking place in the upper catchments of the Mtata key area above the Mtata Dam, the Mzimvubu key area and the Mbashe key area.

A significant number of wetland areas occur in the northern parts of the Mzimvubu key area (T31 and T33).

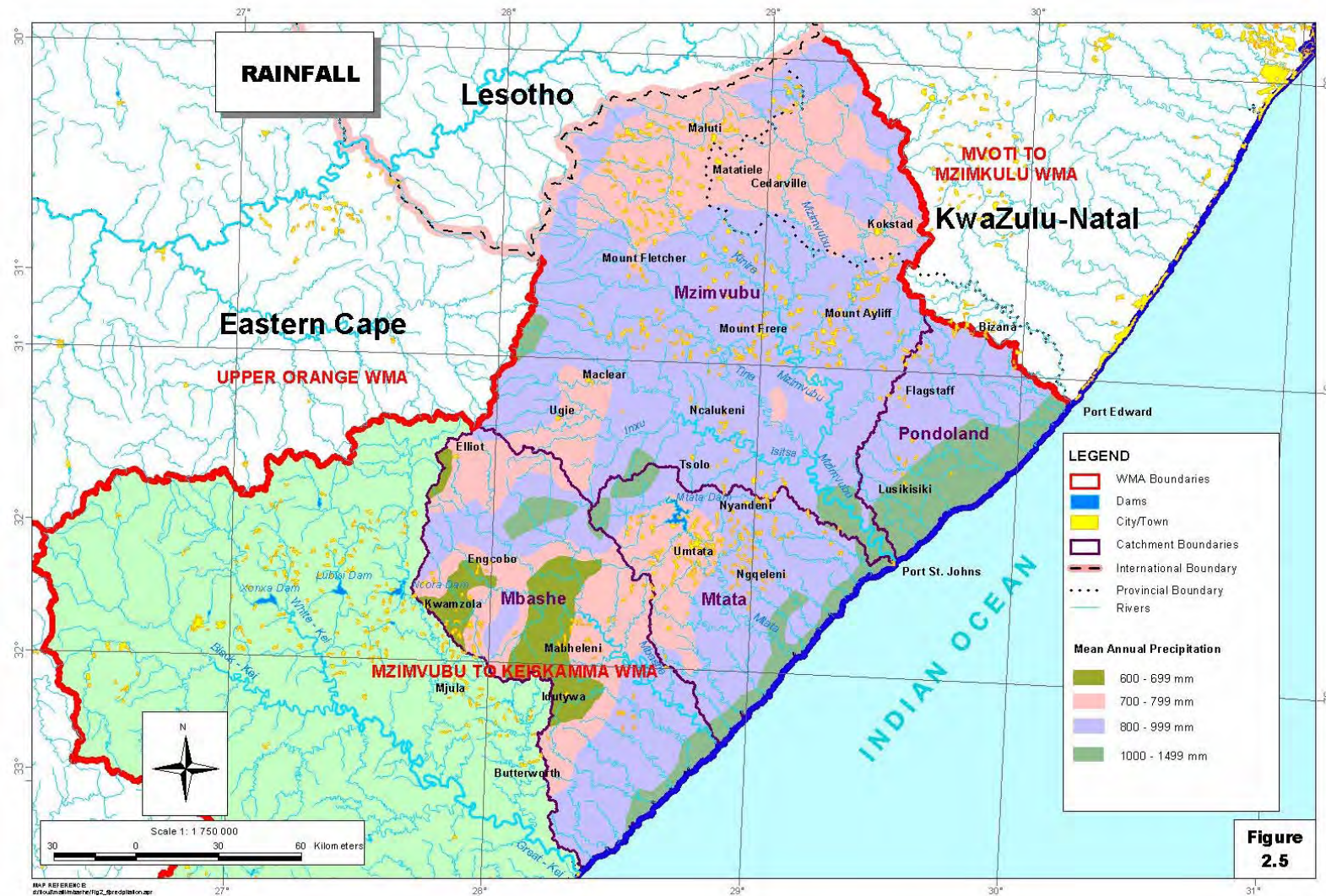


Figure 2.5: Precipitation map of the Mzimvubu to Mbashe ISP area



Internal Strategic Perspectives: WMA12 - Mzimvubu to Mbashe ISP

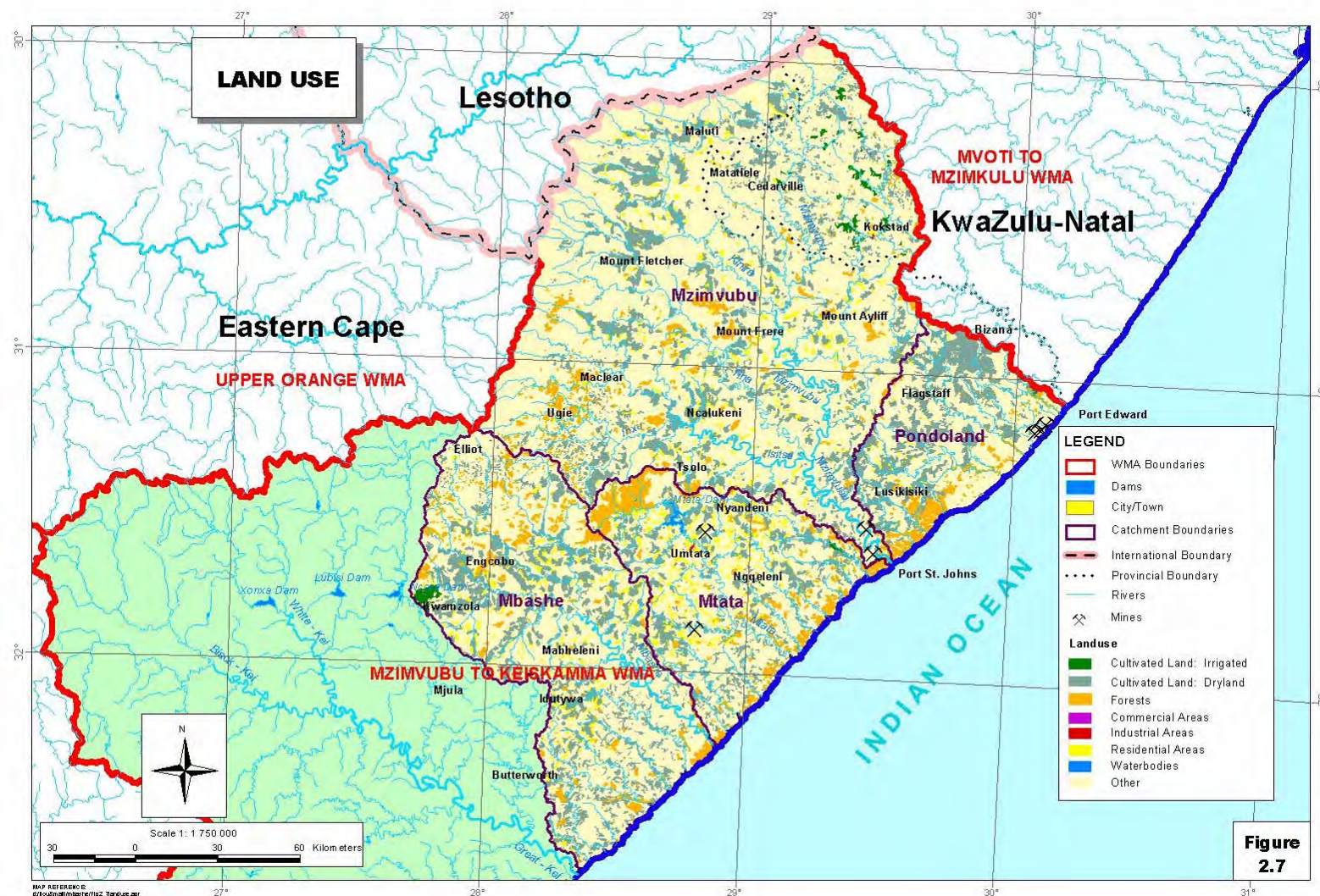


Figure 2.7: Land use map of the Mzimvubu to Mbashe ISP area

2.3 DEMOGRAPHY

According to the demographic study conducted for DWAF in 2001 (MarkData, 2002) ⁽²³⁾, the total population of the Mzimvubu to Mbashe ISP area in 1995 was estimated at 2,69 million. The majority of the population of the area (2,34 million) is situated in rural areas. The urban population is situated mainly in the Mzimvubu (i.e. Kokstad, Matatiele and Port St Johns) and the Mtata (i.e. Mtata) key areas. A number of smaller semi-rural towns are also scattered across the study area. Most of the population lives in small rural villages scattered over the countryside.

The future demography of the ISP area will largely be influenced by economic opportunities and potential as well as the general trend towards urbanisation. With this in mind, the population is expected to show a slow decline after 2005 to approximately 2,48 million by the year 2025. This is attributed to a combination of factors including the lack of strong economic stimulants together with the impacts of HIV/AIDS and migration towards the cities. It is not expected that the profile for classification of the majority of the population will change much in the near future.

2.4 CATCHMENT ECONOMY AND ITS INFLUENCE ON WATER RESOURCES

2.4.1 Economic sectors contributing to the Gross Geographic Product (GGP)

The main economic activities in the Mzimvubu to Mbashe ISP area are subsistence agriculture, tourism and commercial forestry activities (DWAF, 2003) ⁽²²⁾. The government sector also contributes a large share of the GGP in 1996 because of the presence of government services in Mtata, the main urban centre of the study area. It has been noted that with Bisho now being the capital of the Eastern Cape and being situated in the Amatole-Kei ISP area, there has been a significant decline in the GGP contribution of the Mzimvubu to Mbashe study area and an increase in the Amatola-Kei ISP area.

Subsistence sheep and cattle farming is practised extensively throughout the ISP area but particularly in the former Transkei and Ciskei area of the catchments (see **Figure 2.9**). Commercial farming occurs in the former RSA areas such as Ugie, Maclear, Kokstad and Matatiele where irrigation of pasture for dairy farming takes place. These are the areas where agriculture contributes to the GGP of the WMA.

Commercial forestry contributes significantly to the GGP and employment of the Mzimvubu to Mbashe ISP area. Extensive commercial forestry occurs in the upper parts of the Mbashe, Mtata and Mzimvubu key areas. In addition to the Langeni sawmill situated above the town of Mtata, there are small-scale sawmills in the Mtata key area which also contribute to employment creation. There is potential for expansion of areas under forestry because of the ideal rainfall and climatic conditions, particularly in the Mzimvubu and the Pondoland key areas; where 60 000 – 80 000 ha is probably suitable for forestry and 40 000 ha is considered a reasonable target.

2.4.2 Employment

The Mzimvubu to Mbashe ISP area is one of the poorest areas in the country. The majority of the people in this ISP area (nearly 91%) live in rural areas where their incomes are directly linked to the agricultural sector, which is mainly subsistence (EC Province, 2003) ⁽¹³⁾. The levels of education and training in the rural areas are low. Approximately 49% of the people are unemployed. There is a widening poverty gap between the western portion of the WMA and this ISP area due to the unfavourable conditions of the Mzimvubu to Mbashe ISP area as summarised below:

- ☐ The distance from markets due to the poor road and railway infrastructure and the lack of good port facilities has hampered development of industries in the ISP area
- ☐ The ISP area has a largely rural and unskilled labour force, which has contributed to unemployment.

2.5 LAND-TENURE SYSTEM

Land tenure in the area is characterised by the different systems found in the former South Africa and the former Transkei (see **Figure 2.9**). Within what was previously Transkei there are five categories of land tenure:

- ☐ Tribal land sometimes coupled with the quitrent system and permits to occupy (PTO). This constitutes over 80% of the area
- ☐ Freehold land
- ☐ State land
- ☐ Municipal land
- ☐ Institutional land (churches etc).

Within what was the "South African" portion of the area, either individuals or farming syndicates hold the majority of land under freehold title. The remaining areas are state, municipal and institutional lands.

Problems associated with the tribal land tenure system include overgrazing of communal lands. Very little progress has been made to date to change the tenure system to improve land-use practices.

2.6 INSTITUTIONAL ARRANGEMENTS FOR WATER RESOURCE MANAGEMENT

The NWA provides for the establishment of statutory bodies in order to decentralise management of the water resource to ensure sustainability, equity and beneficial use of water resources in the WMAs. **Figure 2.8** shows the roles and responsibility of the institutions involved in water resource management.

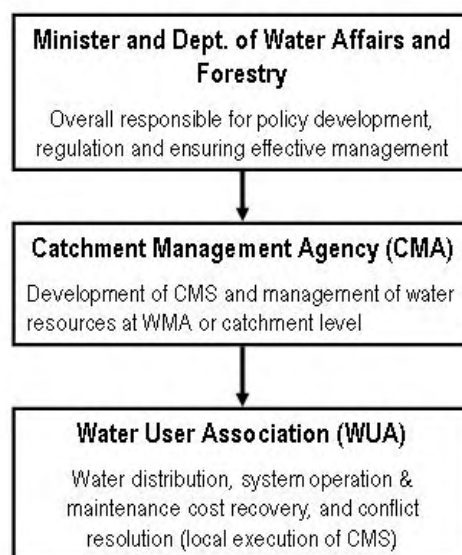


Figure 2.8: Institutional arrangement in the context of Integrated Water Resource Management (IWRM)

The local authorities, although not directly involved in water resource management, are key institutions in water service provision at acceptable levels of service to the communities they serve. **Figure 2.10** shows the 18 local municipalities that are in the Mzimvubu to Mbashe ISP area. The following District Municipalities are situated in the Mzimvubu to Mbashe ISP area:

- ☐ Sisonke District Municipality: This DM straddles the border with the KwaZulu-Natal Province. There are two local municipalities which are designated Water Services Authorities (WSAs), Greater Kokstad and Matatiele Local Municipality.
- ☐ Alfred Nzo District Municipality: This DM is the responsible WSA for the rural areas situated in the upper catchments of the Mzimvubu key area.
- ☐ OR Tambo District Municipality: This DM covers the major portion of the ISP area and includes the towns of Mtata, Port St Johns, etc.
- ☐ Ukhahlamba District Municipality: This DM traverses both the Mzimvubu-Keiskamma WMA and the Upper Orange WMA.
- ☐ Chris Hani District Municipality: This DM is situated in the upper Mbashe key area and extends into the Kei catchment.
- ☐ Umzantsi District Municipality: This DM is situated in the lower Mbashe key area and extends into the Kei catchment.

As can be seen from **Figure 2.10**, it is a very important point to note that the ISP area traverses the provincial boundary of KwaZulu-Natal. The Ukhahlamba DM also traverses two WMAs. This complexity indicates the importance of co-operative governance for the Mzimvubu to Mbashe ISP area. This is discussed in the general strategies of the ISP area.

2.7 WATER RESOURCES OVERVIEW

The Mzimvubu to Mbashe ISP area is one of the areas with the highest mean annual runoff in the country. About 40% of the total surface runoff from the WMA is from the Mzimvubu River catchment. The extent of water resources development in the water management area varies considerably. No noteworthy dams have been constructed in the Mzimvubu River catchment, where significant potential for water resource development remains, as also applies to the Mbashe River. The Mtata River is well regulated by the Mtata Dam. Three small hydro-electric developments exist in the water management area, one on the Mbashe River and two on the Mtata River. An inter-basin water transfer occurs between the Kei and the Mbashe catchments. There are no inter-water management area transfers.

Overall, the available groundwater resources within the catchment are under-utilised, although this clearly depends both on the groundwater occurrence and the demand. The underutilisation of groundwater is attributed to the fact that in the past most groundwater schemes failed for various reasons. The main reason for the failure has been lack of proper maintenance and institutional capacity problems of the local authorities. Local communities are unable or unwilling to accept responsibility for maintenance or have inadequate local authority support. Groundwater is ideal for smaller communities which are prevalent in the ISP area. Even limited groundwater occurrence areas can often provide more than the RDP level of 25 litres per person per day. Groundwater can be the main source for rural water supplies because it is affordable and, if managed properly, can be sustainable.

There is potential for groundwater to contribute to poverty eradication by developing community gardens in this predominantly rural area. This is discussed in more detail in Chapter 3. Chapter 3 and Chapter 4 describe in more detail the groundwater and surface water respectively. The level of detail discussed in these chapters is appropriate for input into the NWRS and consequently has been used to compare the aggregated totals of the ISP key areas with the NWRS. The detailed analysis of the ISP key areas can be found in chapters 5 to 8.

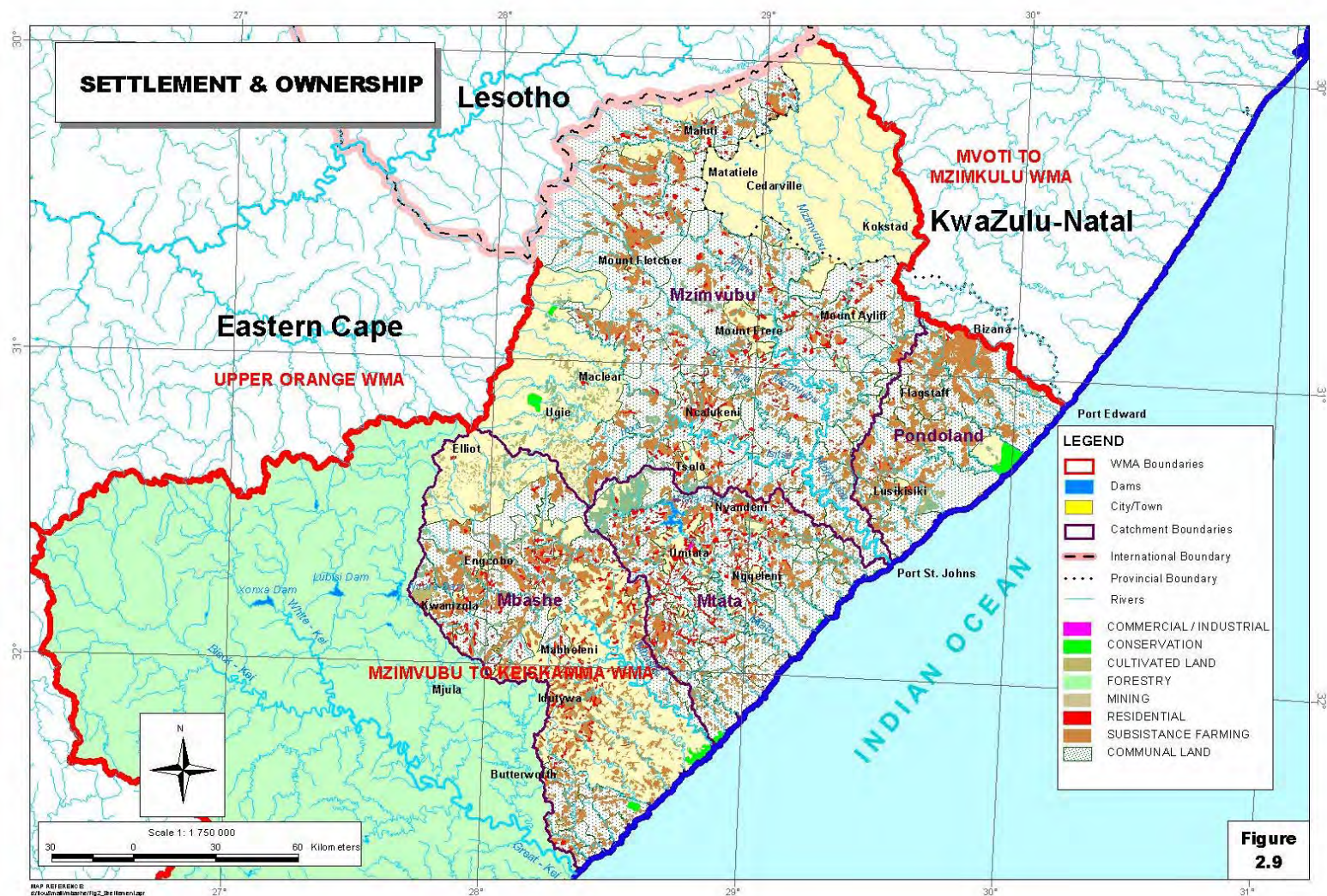


Figure 2.9: Land ownership in the Mzimvubu to Mbashe ISP area

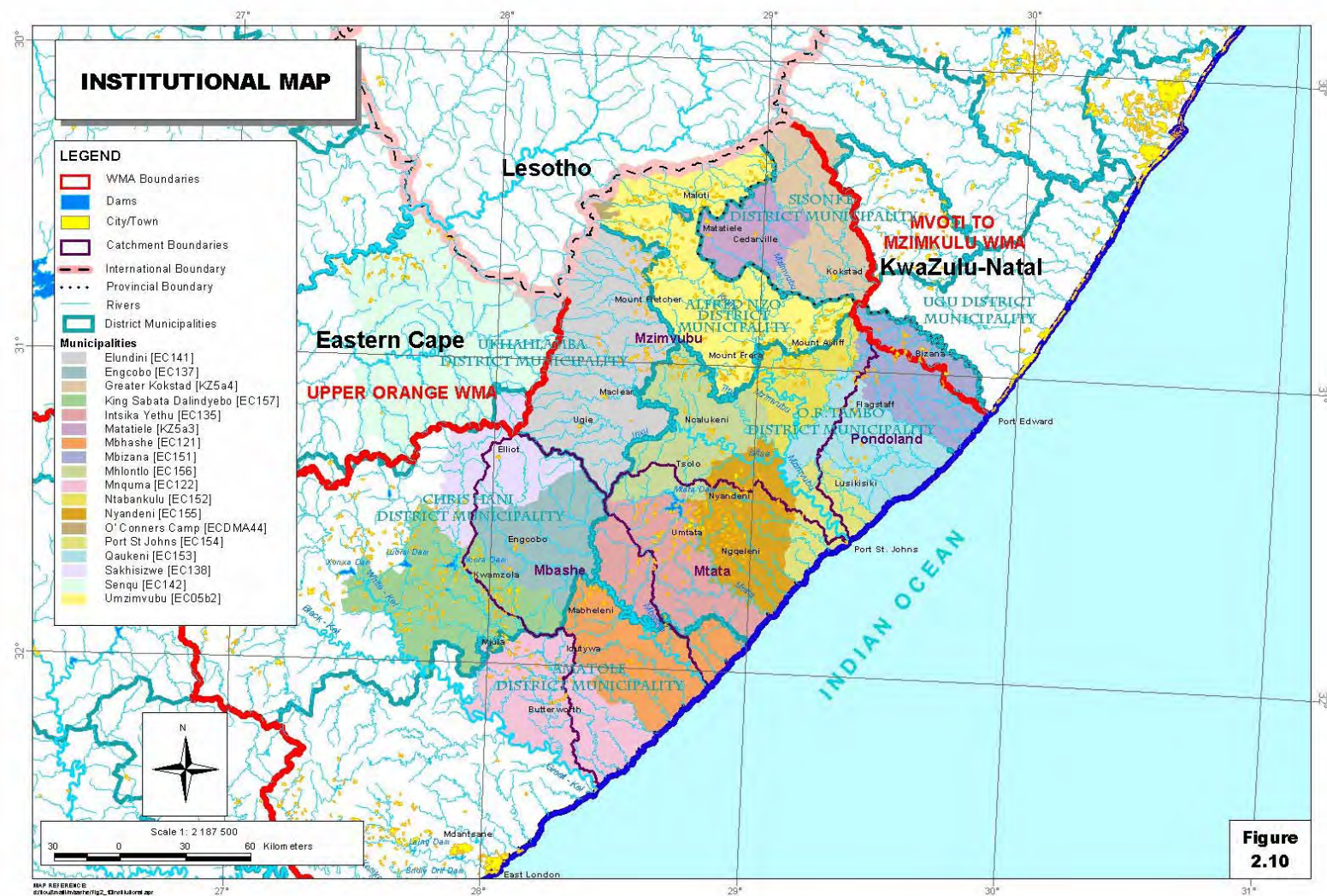


Figure 2.10: Institutions in the Mzimvubu to Mbashe ISP area

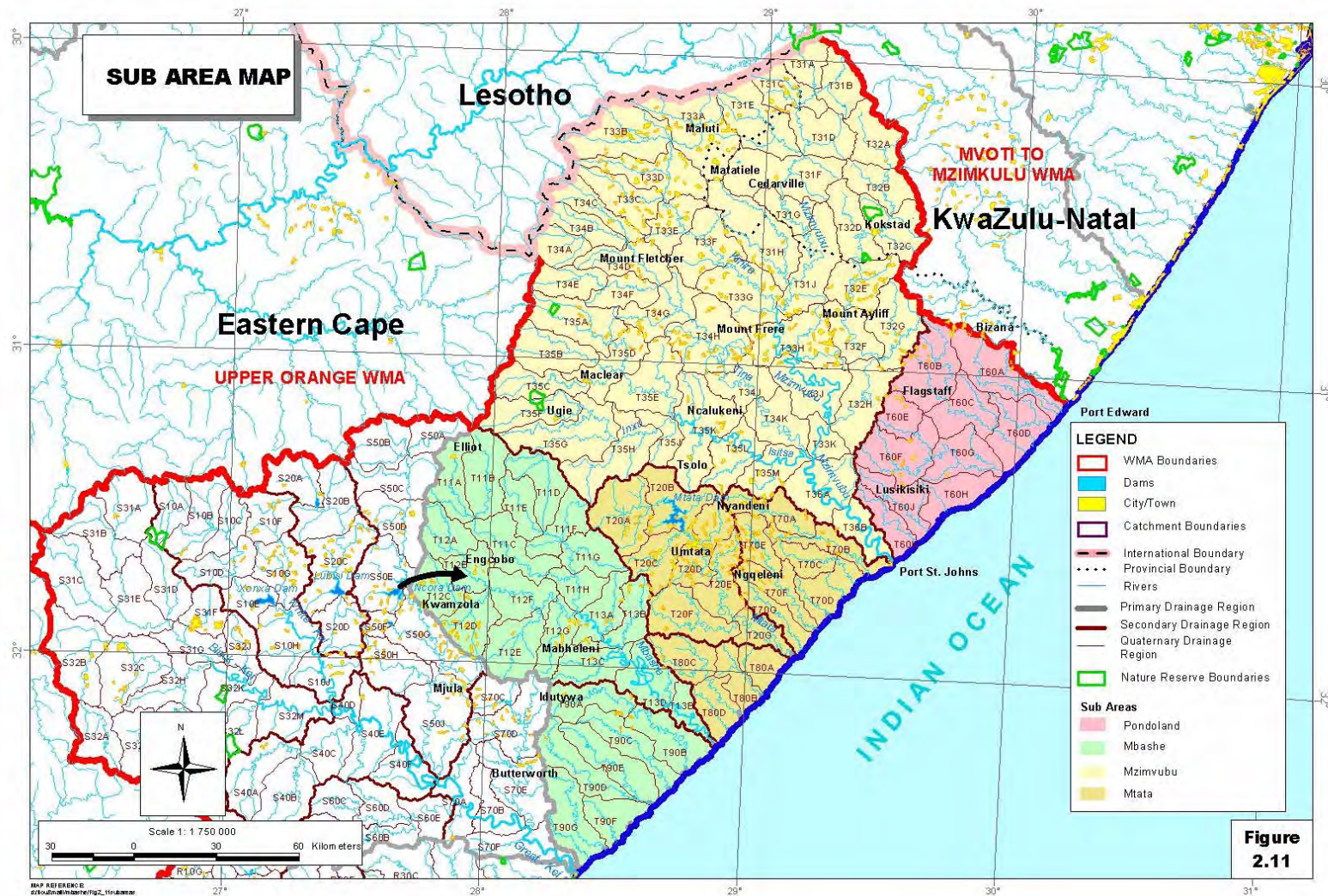


Figure 2.11:Key area maps of the Mzimvubu to Mbashe ISP area