Feasibility Study for an Integrated Watershed Management Program for the Kagera River Basin

Grant No. TF095177

Annex C: Integrated Watershed Management Investment Plan

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LTS

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1. Kagera Sub-basin Regional Gross Domestic Product (RGDP) Estimate

1.1 Purpose of RGDP Estimates

1.1.1 Economic Planning

Economic accounting as applied to integrated watershed management is the disaggregation of national accounts to the river basin level to create a Regional Gross Domestic Project (RGDP). A first estimate of RGDP has been made for the Kagera Sub-basin. This will assist planning of interventions to improve natural resource use in the following ways:

- The RGDP provides a base on which to characterize basin economic activity and (if time series data are available) enables projections to be made of future growth rates. As economic activity increases, the use of finite natural resources will also increase. Integrated watershed management will plan to improve the sustainability of resource use and environmental quality in the basin in the context of changing RGDP.

- The relative importance of different types of economic activity is estimated, which in turn indicates those sectors of the economy which are more or less dynamic, or those sectors which account for the largest proportion of employment of the basin population. This is especially important in relatively undiversified economies where a large proportion of the population is dependent on primary natural resource based activities such as agriculture, forestry and fishing.

- An estimate of the RGDP is essential to estimate the value of basin RGDP per capita, which is an important indicator for economic planning.

- In the case of basins with international waters the share of economic activity of States occupying the basin can be determined, which is important information to assist in making policy decisions at national and international level. The Kagera Sub-basin includes the territories of four States: Burundi, Rwanda, Tanzania and Uganda.

- Differences in RGDP over the area of the Kagera Sub-basin suggest which areas and groups of population are relatively disadvantaged, enabling a more focused approach to economic planning. In addition, the productivity of the basin can be compared with national productivity.

- A high level of economic activity in the upper basin may have adverse impacts on natural resource quality and therefore economic activity in the lower basin. Economic accounting provides an indication of the relative benefits and dis-benefits.

Economic accounts can assist in measuring the impact of proposed planning interventions in the context of economic growth in the basin as a whole: for example an initiative to increase the productivity of the fisheries sub-sector may have little impact on the overall economic growth rate (the value added of fisheries is only about 0.4% of the RGDP) but may have a substantial impact on raising the share of RGDP of a comparatively disadvantaged, though small proportion of the population.

1.1.2 Environmental Accounting

Economic accounts can be criticised as an incomplete measure of the costs of economic activity, since they exclude the cost of unsustainable use (i.e. depreciation of value) of finite natural resources such as minerals, petroleum, fish stocks, soil and forests. Sustainable natural resource use requires that:

- The rate of consumption of renewable natural resources (soils, forest, fish stocks) should not exceed the rate of regeneration
- The rate of consumption of non-renewable resources (minerals, petroleum) does not exceed the rate of generation of renewable substitutes
- The rate of pollution (heavy metals, sedimentation) does not exceed the environment's capacity to assimilate it.

The possibility of unsustainable natural use in the Kagera Sub-basin is high. About 52% of RGDP is derived from the value added of primary goods. There are risks of land degradation by erosion, apparently declining fish stocks and loss of forest cover. Extraction of non-renewable mineral resources accounts for about 1% of RGDP at present, but is likely to increase. The impact of pollution and sedimentation on wetlands and water quality, though difficult to quantify, is a controversial issue.

Formal economic accounts take into account changes in capital stocks of factors of production through investment and depreciation. To estimate economic growth correctly it is important that the stock of natural resources is treated in the same way. However, because natural resources are neither traded commodities nor have a formal market, the difficulty is to quantify depreciation costs in economic terms, and incorporate them in national accounts.

1.2 Methodology

1.2.1 Definitions

The **Gross Domestic Product** (GDP) is the total financial value of all final goods and services produced within a country for consumption during one year. Its rise or fall measures domestic economic activity based on labour and production output. In this study, financial value is the sum of the final value of:

- The production of primary goods (crop, forestry, fish and livestock products)
- Commodities produced in the mining sector
- Processed industrial goods (processed food, drink, textiles, wood and metal products, manufactured articles)
- Utilities (electricity, gas and water)
- Construction (buildings and other infrastructure)
- Commercial and financial services (banking, insurance)
- Transport and communications
- Social services (housing, government, education and health care).

The value of intermediate goods and services used in production is not included in GDP since it is reflected in the final price of goods or services offered for sale. For example, to avoid double counting the value of raw milk used in the production of processed milk products should not appear in the value of agricultural production, but should be shown in the value of processed industrial goods. The GDP includes allowances for depreciation and indirect business taxes such as those on sales and property.

The **Regional Gross Domestic Product** (RGDP) is the GDP for a defined geographical area within the State territorial boundary (an administrative unit, a river basin, or part of a river basin). After adjustments for any double counting, the sum of the RGDP for all administrative units of a country should equal the national GDP before any national-level adjustments are made.

Current prices are monetary prices and values (value is price multiplied by quantity) of goods and services during the period for which they are reported. **Constant prices** are monetary prices and values of goods and services relative to a defined base time period. Constant prices allow prices and values to be directly compared between time periods by removing the effect of inflation.

Purchasing Power Parity (PPP) is an estimate of the exchange rate required to equalize the purchasing power of different currencies, in order to compare the value of production and cost of living between countries. This is necessary because the cost of goods and services offered for sale varies between countries depending on the price of labour and intermediate products. Also, currency exchange rates vary widely, depending on monetary policy, perceived international financial risk and other factors. PPP estimates are made by the United Nations' International Comparisons Project and are reported annually by country in the World Bank's World Development Indicators and IMF country data.

1.2.2 Statistical Sources

Much of the work required for RGDP estimates can be done using statistical sources available on the internet, notably country statistical offices and websites containing country data. For this rapid desk-top study too many on-line publications were used to site them all, but the following procedure was used:

- Identify recent GDP statistics for recent years (available on all government statistical office websites except for Burundi)

- Collate areas and rural and urban population for administrative areas appropriate for IWM planning, these are districts for Burundi, Tanzania and Uganda and provinces for Burundi (available on a variety of websites: Statoids and Geohive are particularly helpful)

- Calculate the proportion of administrative areas located in the Kagera Sub-basin by sub-watersheds (a GIS cross-tabulation) and from this estimate the proportion of the administrative area population by basin and sub-watershed population having regard for the location of major towns

- Disaggregate sector GDP by administrative area using an appropriate weight. This might be quite a complicated procedure. For example, to disaggregate annual GDP for crop production the area, production and value of each crop is required by administrative area. The availability of this data basically depends on the frequency that agricultural sample surveys are carried out, bearing in mind that cash crops produced by commercial enterprise may not be enumerated in such a survey. For Burundi no recent data exists, for Rwanda such data is available for 2009/10. Prices usually have to be obtained from FAO Stat and the data sets are often incomplete. The availability of sector production data decides on the year of the GDP estimate to be used – obviously the idea is to use the most recent data available (unless creating a RGDP time series, which was outside the scope of this study).

- Apply the administrative area weights and disaggregate the GDP by sector.

The weighting process is not easy, and lacking any better statistics one may resort to weighting by administrative area population. For example information on the value of services related to Finance and Insurance is difficult to find: in Kagera one would weight the GDP statistic by the urban population of administrative areas, on the assumption that these services were essentially urban. But in a country where crop insurance is widely available and used then this assumption would be erroneous.

To prepare RGDP estimates thoroughly and regularly is the responsibility of an IWM/river basin planning and management office with the time, resources and access to collate and process the data. With effort a good and informative database can be established, which enables the calculation of such useful high-level statistics as return to labour by sector and sectoral growth rates. The estimates presented in this report represent the work of a few days and should be treated as indicative only.

1.2.3 Standardization of RGDP Estimates between States

The RGDP accounts at summary level of Burundi, Rwanda, Tanzania and Uganda are similar: all follow the international convention. The international standard for measuring GDP is described in the book System of National Accounts (1993) and most countries follow this. It is also straightforward to express financial values in a common currency: both in constant international US$ and using a numeraire which accounts for the different purchasing power of three national currencies (purchasing power parity or PPP). The procedure used was as follows:

- Obtain RGDP data in current prices in national currency for each administrative unit in the basin
- Convert current prices in national currency to current US$ at the average annual exchange rate for the year in which the GDP estimate was made (taken from the IMF, World Economic Outlook Database)
- Convert current US$ to constant 2011 US$ using the US GDP deflator from the same source
- Convert constant 2011 dollar prices back into national currency using the 2011 exchange rate and calculate current PPP$ prices using the implicit country specific index from the IMF World Economic Outlook database

The different exchange rates and indices used, together with their sources are shown in Table 1-1.

Table 1-1 Population, GDP, Price and Production Statistical Sources

Riparian State	*Population estimate*	*Year of GDP valuation*	*Year of production statistics*	*Year of price statistics*	*Currency reported*	*US$ exchange rate*	*Year of exchange rate*	*PPP exchange rate*
Rwanda	2009	2009/10	2009	2009	RWF b.	568	2009	271
Burundi	2008	2005	n/a	2005	BIF b.	1075	2005	589
Tanzania	2002	2004	2002/03	2003	TZS b.	1089	2004	544
Uganda	2010	2008	2008/09	2009	UGX b.	1696	2008	846

An obvious weakness of the methodology is that comparison between RGDP of administrative areas between countries is for different years, despite measuring all in constant 2011 US$. Thus the Rwanda estimate is based on economic activity in 2009/10, while the Tanzania GDP estimate represents economic activity in 2004. Tanzania is therefore under-estimated by five years of economic growth compared to Rwanda. In fact the Tanzanian economy grew by an average 10% per annum in current prices (although much less if inflation was accounted for). The reason for this is that no district level production statistics were easily available by administrative area for Tanzania after 2004. With more time and a greater budget, this data could be sought out.

1.2.4 Reconciliation of Administrative Area Data to the Basin

It is necessary to determine how much of the economic activity reported in RGDP accounts for each of the 57 administrative units falling within the Kagera Sub-basin. The following assumptions were used as logical guidelines:

- The urban population accounts for a high proportion of industrial manufacturing, construction, utility supply, commerce, hotels and restaurants and financial services (about 30% of RGDP of the basin). Therefore if the size of the urban population is known and urban centres are locatable, then most urban based economic activity can also be located; see section 1.3.3.

- Agriculture (crops), commercial forestry (plantations) production and fisheries (over 50% of RGDP of the basin) can be located from farming systems studies and GIS land use mapping.

Therefore about 80% of economic activity in the administrative areas can be located as either within or outside the Kagera Sub-basin relatively easily. Only the location of economic activity related to social service provision (health, education etc.) livestock, forestry, hunting and transport and communications remains difficult to locate. For a more rough and ready estimate, one can assume that the RGDP of each administrative area within the Kagera Sub-basin is directly proportional to its area inside the basin. Given the rapid assessment that was appropriate for this study, this approach is acceptable.

1.3 Kagera Sub-basin RGDP Estimate

1.3.1 Total RGDP of the Kagera Sub-basin

The estimated RGDP of the Kagera Sub-basin was about US$ 4.3 billion in market prices (constant 2011 US$). Expressed in PPP, RGDP was US$ 10.1 billion. Compared with many other river basins in Africa of similar size (60,500 km^2) this is a substantial RGDP – reflecting the high population density of over 250 per km^2 (15.2 million people). The distribution of the RGDP between the four riparian States is shown in **Table 1-2**.

Table 1-2 Share of Kagera Sub-basin RGDP by Riparian State

State	*Area km^2*	*Population*	*RGDP at market prices (2011 US$ million)*	*RGDP at PPP (2011 US$ million)*	*GDP at market prices (2011 US$ m)*	*Year of GDP estimate*
Rwanda	21,650	8,168,501	3,635	8,192	4,606.44	2009/10
Burundi	13,904	5,085,438	252	549	416.98	2005
Tanzania	20,632	1,410,263	302	826	7,238.01	2004
Uganda	4,467	551,654	189	544	14,952.52	2008
Total	60,653	15,215,856	4,377	10,112	*Share of basin in GDP*	
Rwanda	36%	54%	83%	81%	79%	
Burundi	23%	33%	6%	5%	60%	
Tanzania	34%	9%	7%	8%	4%	
Uganda	7%	4%	4%	5%	1%	

Rwanda is the dominant economy in the Kagera Sub-basin with an 83% share in RGDP (expressed in market prices), Tanzania second with 7%, Burundi third with 6% and Uganda with only 4%. The order is less surprising than the diminutive economic share of Burundi, which has 23% of the land area and 33% of the population of the basin, but achieves only a 6% economic share. Partly this is explained by the Burundi GDP estimate being from 2004, while that for Rwanda is for 2009: this implies that the size of the Rwanda economy is over-estimated compared with Burundi's. Nevertheless, the Burundian economy would have to have grown by 18% p.a. in real terms between 2004 and 2009 to achieve a mere 10% of the basin economy in 2009: in fact it grew only by an average of 3.5% per annum.

The principle cause of the wide difference in size of the Rwandan and Burundian economies is that the productivity of agricultural land in Rwanda is over four times higher than in Burundi[1] and the primary sector accounts for 52% of Burundi's GDP, compared with only 36% for Rwanda. Thus a very large proportion of the Burundian economy has a much lower productivity than the smaller equivalent sector of the Rwandan economy.

Even though the details of the RGDP estimate can be argued, it is obvious that the most cost effective way to raise basin RGDP as a whole is both to increase the productivity of

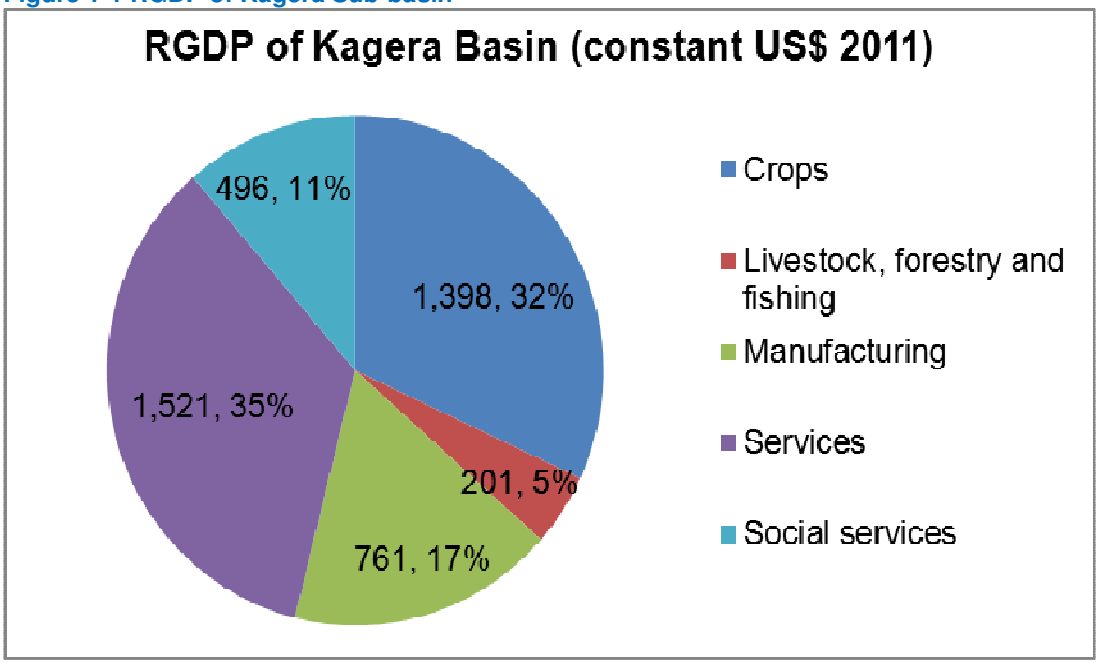
[1] In 2009 Rwanda achieved a gross productivity of about US$ 700 per ha over about 2.0 million hectares. Double cropping explains some of the high productivity of Rwandan smallholders whose farms are largely rainfed. In 2004 Burundi achieved only about US$ 200 per ha over 2.15 million ha.

Burundian agriculture and reduce its share of the economy by the development of other sectors with higher productivity.

The importance of the Kagera Sub-basin to the sharing countries (in terms of basin share of GDP) is different from the country's share of economic activity within the basin in three of the riparian States. While 79% of Rwanda's economic activity takes place within the basin, only 4% of the Tanzanian economy and an almost negligible 1% of that of Uganda is found within the basin. In economic terms Uganda could not be expected to be very committed as a basin "stakeholder", though Tanzania might be expected to be more committed. The Kagera Region (old West Lake Region) is one of 22 regions and covers 40,838 km^2, of which about half is located in the Kagera Sub-basin. Burundi has a much greater stake in the basin. Despite a very small economy, 60% of it is located in Kagera. However the capital Bujumbura (accounting for 10% of GNP) is located outside, while Kigali (accounting for 20% of GDP) occupies a central position in the Kagera Sub-basin.

The financial value of the main economic sectors comprising RGDP is shown in Figure 1-1. The economic activity in the basin is undiversified, with a small secondary (manufacturing) sector, a large service sector (much of which is "informal") and a moderate value of social service provision (11%). The primary sector is the largest at 37%, and of that food crops dominate at 32%. In terms of value, the cash crop sub-sector is very small, and livestock, forestry and fishing together only account for about 5% of the RGDP.

Figure 1-1 RGDP of Kagera Sub-basin



1.3.2 RGDP Per Capita

The estimates of RGDP per capita are shown in both market prices and PPP in Table 1-3. While RGDP per capita is estimated to be highest in Rwanda, the date of estimation is the most recent: other economies will have grown in the interval between the date of GDP estimate and 2009. The per capita estimates in PPP appear rather low. This is because they are deflated to constant 2011 US$: purchasing power would have been greater in the year for which the data were reported.

Table 1-3 Kagera Sub-basin RGDP per capita in Market Prices and Purchasing Power Parity

	Population	RGDP per capita in market prices in constant 2011 US$	RGDP per capita in PPP in constant 2011 US$	Year of GDP Estimate
Rwanda	8,168,501	445	1,003	2009/10
Burundi	5,085,438	49	108	2005
Tanzania	1,410,263	214	586	2004
Uganda	551,654	343	987	2008
Overall	15,215,856	288	665	

The Burundian population in the Kagera Sub-basin is substantially disadvantaged compared with the population of the other riparian States. This is due to a long period of conflict, followed by hesitant recovery. Taking into account the year of estimation, the populations of Rwanda, Tanzania and Uganda have similar levels of RGDP per capita when expressed in PPP.

1.3.3 Distribution of RGDP by Rural and Urban Population

The statistics available to this analysis do not allow an assessment of how RGDP is distributed between income groups in the Kagera Sub-basin. Nevertheless, the distribution of RGDP between urban and rural areas is of interest and can be estimated using income distribution estimates from other studies. Assuming that the urban to rural division is the main explanatory variable for income distribution – that is, the urban population has a proportionally larger share of RGDP than the rural – it is possible to distribute RGDP between urban and rural areas by RGDP sector share to arrive at Gini coefficients by State similar to those calculated as part of studies with access to household income statistics. Table 1-4 shows the results of the calculation.

Table 1-4 Rural and Urban RGDP per capita Estimate for Kagera Sub-basin

State	National Gini coefficient	Year of Esti-mate	Source	Rural RGDP per capita, PPP constant 2011 US$	Urban RGDP per capita, PPP constant 2011 US$	Basin level Gini coefficient
Rwanda	0.51	2006	UNDP	614	2,096	0.52
Burundi	0.40	1998	IDS	73	789	0.37
Tanzania	0.38	2003	Earthtrend	444	1,864	0.35
Uganda	0.41	2005	OECD	654	3,977	0.42
Kagera Sub-basin				391	1,997	0.51

A Gini coefficient of zero implies perfectly equal income distribution between the groups selected. It is assumed that the main explanation for income distribution is living in a rural or an urban area. According to recent studies, Rwanda has the highest Gini coefficient suggesting increasing inequality in income distribution. Gini coefficients for other States are lower, in particular Burundi. If basin RGDP is distributed by sector between rural and urban areas, assuming that the primary sector is allocated to rural areas, most of the secondary sector is allocated to urban, and the tertiary sector is distributed between the two, then the per capita income in rural and urban areas can be calculated to return a Gini coefficient similar to the national estimate made by independent studies.

The main purpose of this calculation is to estimate the relative share of basin economy between rural and urban areas, as shown in Table 1-5. The urban population comprises about 20% of the basin (the conurbation of Kigali accounts for about 40% of this) but is associated with slightly more than 50% of the value of the basin economy. The estimate is very rough, but it gives an order of magnitude of the importance of urban areas and population in the basin as a whole.

Table 1-5 Distribution of RGDP between Rural and Urban Population in Kagera Sub-basin

	Population	*RGDP at market prices (2011 US$ million)*	*RGDP at PPP (2011 US$ million)*	*Per cent share of basin economy*
Rural	12,627,805	2,122	4,942	49%
Urban	2,588,050	2,254	5,169	51%
Total	15,215,856	4,377	10,112	

1.3.4 RGDP by Sub-watershed

Kagera Sub-basin RGDP was estimated by summing the RGDP of administrative units weighted by the proportion of the administrative area situated within the basin. Then a cross tabulation of administrative area by sub-watershed allows the calculation of weights to distribute RGDP of the constituent administrative areas within the basin by sub-watershed. The results are shown in Table 1-6.

Table 1-6 Distribution of RGDP between Kagera Sub-basin Watersheds

Sub-basin	Area in Kagera Sub-basin km2	Kagera Sub-basin population	Total RGDP in market prices 2011 US$ million	RGDP per capita, 2011 US$	Total RGDP expressed in 2011 PPP US$ million	RGDP per capita expressed in 2011 PPP
Ntungamo	1,022	86,972	43	328	123	944
Kagitumba	2,642	705,888	305	992	747	2,529
Karagwe	2,655	155,880	53	125	144	341
Kagera 3	6,650	942,477	360	1,137	832	2,615
Mwisa 2	5,357	380,341	79	273	216	749
Mukungwa	1,898	1,124,184	460	1,846	1,041	4,426
Nyabarongo	1,431	808,138	300	819	677	1,845
Nyabugogo	1,665	959,943	570	1,591	1,284	3,585
Mwogo	3,348	1,234,252	429	2,144	966	4,832
Kagera 1	2,225	1,189,376	754	2,477	1,701	5,583
Akanyaru	5,325	2,256,437	483	1,536	1,086	3,459
Kagera 2	1,418	383,618	133	443	301	1,004
Mwisa 1	1,354	94,100	13	61	35	166
Kirundo	1,099	541,698	13	20	30	44
Ngara	1,563	136,924	19	73	53	199
Muyinga	469	166,709	6	12	14	31
Ruvubu 3	1,626	478,639	21	64	49	151
Ruvubu 1	4,168	1,645,262	65	194	141	423
Cankuzo	818	148,203	18	100	39	218
Ruvubu 2	1,559	416,937	48	236	104	516
Gitega	2,040	692,651	23	74	50	163
Kagera 4	7,667	623,539	129	837	359	2,369
Kagera Basin	58,001	15,172,167	4,322	285	9,992	659

One benefit of the calculation is to order economic activity into a hydrological hierarchy. Ordering RGDP by sub-watershed, the economic heartland of the Kagera Sub-basin is Kagera 1, with relatively high levels of activity around it to the north, west and east. The north, east and south of the Kagera Sub-basin have much lower levels of economic activity. The main conclusion that can be drawn from this distribution is that the quantity and quality of water from sub-watershed upstream of Kagera 1 should be secured for the continued economic health of the Basin's economic heartland. Quality and quantity of water leaving Kagera 1 to the downstream sub watersheds of Kagera 2 (a sub watershed of relatively low economic activity) and particularly Kagera 3 (with relatively high activity) is a related consideration. The apparent extreme impoverishment of Muyinga and Kirundo sub watersheds is also notable.

As well as total RGDP estimates by sub-watershed, the calculations give an estimate of the distribution of economic activity by sector. This breakdown can be helpful in the identification of IWDP benefits.

1.3.5 Trade between Riparian States

A project aimed at promoting the growth of riparian state economies in a river basin must necessarily consider the status of international trade between those states. International trade is a manifestation of comparative advantage, and development plans for trans-boundary basins should take into account the most economic use of basin resources within their respective territories. Table 1-7 shows the trade status in 2009, sourced from the International Trade Centre Market Analysis data. Note that only Tanzania, a costal country has a substantial export trade. Only Uganda exports more than 5% of its total exports to other riparian states, other inter-riparian state trade is negligible: Uganda is both land-locked and a relatively large economy compared with neighbouring Burundi and Rwanda. Burundi exports nothing to the other riparians; the country is still under reconstruction. Tanzania and Uganda both export to Burundi.

The total value of trade between riparian states was only US$ 92.7 million in 2009. About half of this is in commodities and half in manufacturing. The total trade volume between the riparian states is only about 2% of the RGDP of the Kagera Sub-basin, and a tiny proportion of the combined GDP of all four states. The reasons for this include poor connecting infrastructure, three of the states being landlocked and low diversification of economies and markets. This is sufficient to suggest that if inter-regional trade will be a lynch pin of the development in the Kagera Sub-basin, it is going to have to be built from a very low base.

Table 1-7 International Trade between Riparian States of the Kagera Sub-basin

Exporter	*Importer*	*Exporter's exports to importer value 2009 in US$ thousand*	*Exporter's exports to world value 2009 in US$ thousand*	*Importer's imports from world value 2009 in US$ thousand*		*% of exports to world*	*% of imports from world*
Rwanda	Rest of the World	211,417	211,417				
	Burundi						
	Tanzania	142	802	665,724		18%	0%
	Uganda	305	3,444	1,101,290		9%	0%
Burundi	Rest of the World	112,923					
	Rwanda						
	Tanzania						
	Uganda						
Tanzania	Rest of the World	2,954,048	2,954,048				
	Rwanda	3,251	177,880	81,990		2%	4%
	Burundi	4,748	629,201	132,587		1%	4%
	Uganda	20,167	1,515,306	2,335,313		1%	1%
Uganda	Rest of the World	978,611	978,611				
	Rwanda	30,117	859,250	209,620		4%	14%
	Burundi	20,389	374,191	99,998		5%	20%
	Tanzania	13,564	550,911	3,792,320		2%	0%

1.3.6 The Value of Foreign Exchange in Kagera Sub-basin

The economic analysis of the proposed IWM project is complicated by the presence of four economies sharing Kagera Sub-basin resources and any differences in the economic performance between them has to be identified and accounted for. Trade statistics are used to calculate three important parameters.

The shadow exchange rate (SER) is the economic price of foreign currency and shadow exchange rate factor (SERF) is the conversion rate of officially valued currency to economically valued currency. Both are used in economic cost benefit analysis to re-value traded goods to a commensurate economic value with non-traded goods (shadow exchange rate approach), or to estimate the closely related standard conversion factor (SCF) which is used to adjust the financial value of non-traded goods (the conversion factor approach) to value them equivalently to traded goods. Either method eliminates the effect of the premium paid on traded goods over non-traded goods through national trade policy, where imports are normally taxed and exports are sometimes (though rarely) subsidised. Table 1-8 shows these estimates for each riparian state, though it is not appropriate to discuss the calculations in detail here.

Table 1-8 Estimates of SER, SERF and SCF for Kagera Sub-basin Riparian States, 2010

Items	Variables/Equations	Source	Comments	Unit	Burundi (BIF)	Rwanda (RWF)	Tanzania (TZS)	Uganda (UGX)
Total imports	M	ITC 1/	CIF, converted from US$ at OER	million	184,483,145	732,101	9,733,358	11,355,978
Special transactions	SM		no data	million	0	0	0	0
Other nonresponsive imports	NM		no data	million	0	0	0	0
Net Imports	dM=M-SM-NM			million	184,483,145	732,101	9,733,358	11,355,978
Total exports	X	ITC 1/	FOB, converted from US$ at OER	million	61,058,440	138,677	4,445,322	3,943,828
Special transactions	SX		no data	million	0	0	0	0
Reexports	RX		no data	million	0	0	0	0
Other nonresponsive goods	NX		no data	million	0	0	0	0
Net exports	dX=X-SX-RX-NX			million	61,058,440	138,677	4,445,322	3,943,828
Trade deficit	dQ=dM-dX			million	123,424,705	593,424	5,288,036	7,412,150
Import tariffs	IT	ITC 1/		million	14,850,893	58,275	840,962	922,105
Net tariff equivalent of Quantitative Restrictions (QR)	TR		not applicable	million				
Import tariff rate	tm=(IT+TR)/dM				8.1%	8.0%	8.6%	8.1%
Export taxes	XT			million	0	0	0	0
Net tax equivalent of QRs	XX		not applicable	million	0	0	0	0
Export subsidies	XS			million	0	0	0	0
Export tax rate	tx=(XT+XX-XS)/dX				0	0	0	0
Elasticity of supply (exports)	es	Tokarick (2010) 2/			0.57	0.40	0.67	0.60
Elasticity of demand (imports)	ed	Tokarick (2010) 2/			-1.23	-1.23	-0.92	-0.76
Weight on supply	Ws=es/[es-{ed*(dM/dX}				0.1330	0.0580	0.2496	0.2152
Weight on demand	Wd=-{ed*(dM/dX)} / [es -{ed*(dM/dX)}]				0.8670	0.9420	0.7504	0.7848
Official exchange rate	OER	IMF3/		local /US$	221,590	583	1,491	2,437
Using Official Exchange Rate								
Shadow exchange rate	SER = Ws*OER*(1-tx) + Wd*OER*(1+tm)			local /US$	**237,056**	**627**	**1,587**	**2,592**
Shadow exchange rate factor	SERF = SER/OER				**1.0698**	**1.0750**	**1.0648**	**1.0637**
Standard conversion factor	SCF = OER/SER				**0.9348**	**0.9302**	**0.9391**	**0.9401**
Using Equilibrium Real Effective Exchange Rate 4/								
Equilibrium Real Effective Exchange Rate	EER = OER*{1+dQ/(es*dX-ed*dM)}	Omerbegovic 2005 5/			326,091	945	2,151	4,079
Shadow exchange rate	SER = EER * {Ws*(1-tx)+Wd*(1+tm)			local /US$	**348,850**	**1,016**	**2,291**	**4,339**
Shadow exchange rate factor	SERF = SER/OER				**1.5743**	**1.7423**	**1.5367**	**1.7807**
Standard conversion factor	SCF = OER/SER				**0.6352**	**0.5740**	**0.6507**	**0.5616**

Sources and Notes

1/ Market Analysis and Research, International Trade Centre (ITC); http://legacy.intracen.org/appli1/TradeCom

2/ Country calculations from A Method for Calculating Export Supply and Import Demand Elasticities, Stephen Tokarick, IMF Working Paper 2010 (except Rwanda export elasticity, taken from New farmer, 2010)

3/ World Economic Outlook www.imf.org/

4/ EREER is a measure of competitiveness determined by terms of trade, trade openness, net capital inflows, relative productivity differential, government consumption, and workers' remittances. This is only a partial estimate

All the states have remarkably similar SCF when calculated using the official exchange rate (OER). This is because the import tariff rate applied by each state is similar and low, about 8%. Trade elasticities are also similar and low. This implies that a change in import or export price means very little change in the value of goods exported or consumed, respectively. This is expected. Populations have low purchasing power to consume expensive foreign imports; industries are under capitalised, inflexible and unable to re-act quickly to global market prices.

When SCF is calculated using the “real effective exchange rate”, (which in this case is only a partial analysis taking into account trade imbalances) a much higher premium is estimated for foreign currency. This too is intuitively reasonable: imported goods would be expected to be highly valued in economies with a small industrial base. But even so, all riparians appear to give a similar value to foreign exchange. The calculations shown in Table 1-8 suggest that we should not be too concerned about detailed adjustments to the value of the traded goods component of project investment between riparian states.

2. Cost Estimate of KIWMP

2.1 Summary of KIWMP Organisation

The core of the Kagera Sub-basin Integrated Watershed Management Programme (KIWMP) will be the implementation of projects both within riparian state boundaries and at sub-basin level. The projects are categorised as watershed management (WSM) projects (principally directed towards the management of resources on a catchment basis) and wetlands management (WM) projects (principally directed towards the management of wetlands within a catchment), though projects in either category may have management elements of both. "Country" projects (i.e. projects for implementation entirely within the boundaries of one riparian country) were identified by stakeholder consultation, and were prioritised by stakeholders as Priority 1, for immediate implementation, and Priority 2 projects for implementation in a second phase of the programme. "Basin" projects were also identified by stakeholders for cooperative implementation across riparian state boundaries. These were also divided into Priority 1 and Priority 2.

KIWMP has been designed around the stakeholder selected "country" and "basin" projects. KIWMP is divided into four components:

- Component 1: Programme Coordination and Management
- Component 2: Priority 1 "Country" Projects for immediate implementation
- Component 3: Priority 1 "Basin" Projects for immediate implementation
- Component 4: Programme Capacity Building and Policy Development

It is envisaged that KIWMP will be implemented through NELSAP, which will be responsible for preparing and commissioning projects, procurement, contractual issues and fund management. NELSAP will channel funds, technical assistance and administration of KIWMP through four National Liaison Officers with offices in each of the four riparian states. Management overview will be provided by appointed project advisory panels and steering committees. Financial provision for these activities is provided under KIWMP Component 1.

Component 2 comprises Priority 1 WSM and WM "country" projects and Component 3 comprises Priority 1 "basin" projects selected by stakeholders as described above.

Component 4 will focus on capacity building and policy development and includes training (to serve the joint requirements of two or more KIWMP projects), monitoring and evaluation of KIWMP (including establishing and maintaining management information systems and measuring sub-basin level impacts), basin outreach and research.

2.2 KIWMP Accounting Structure

2.2.1 COSTAB

COSTAB was used to prepare financial cost estimates of each of the components. Basic data is entered into COSTAB as numeric unit costs of the resources required for implementation. These are then allocated to project components according to the phased quantities of resources required. At the heart of COSTAB are the Components and Expenditure Accounts summary divisions. Components define what the project will try to achieve and what the resources are that the project will require (on the basis of the unit costs and quantities). Expenditure Accounts describe the resources that a project will purchase. Expenditure accounts distinguish investment and recurrent costs and are divided into different categories according to the nature of goods and services purchased. Costs are also attributed to investment and recurrent Disbursement Accounts, identifying the account by who is going to administer it. This is the basis of the project Financial Plan. Procurement

procedures follow specific rules which are defined within COSTAB. Procurement accounts can be opened for different categories and sub categories of expenditure.

Because projects will be implemented in each riparian state, separate COSTAB files have been created for each project to reflect their different currencies, exchange rates and economic conversion factors. The derivation of country-specific exchange rates and economic conversion factors is described in sections 1.2.3 and 1.3.6. Priority 1 projects have been costed over an assumed implementation period of five years during the period 2013-2017.

Some of the "projects" are in fact feasibility studies to identify full projects for implementation in a later phase of KIWMP. As "Priority 2" projects, these have not been costed. However, nearly all of the projects identified by stakeholders as "Priority 1" projects require more investigative work to establish their feasibility. The additional work required is costed and included in Component 1. The scope of the projects and the costs and quantities of project resources required for implementation presented here are indicative, and assumptions have been made on project financing which require further discussion as the shape of the programme for implementation becomes clearer. The use of COSTAB for programme financial formulation will assist these discussions because it is easily revised and provides consistent cost formats.

2.2.2 Project Cost Summaries

Cost summaries are presented by sub-component for all "Priority 1" projects in both local currency (using 2011 exchange rates) and US$. The "sub-components" are in fact components of each project described, but they are referred to as sub-components to distinguish between programme components. The cost summaries are the total costs over the first five years of programme implementation, starting in 2013. Note that a physical contingency of 10% is applied to base costs to arrive at total costs. An estimate of the proportion of foreign exchange required for the implementation of each sub-component is also given. For all "Priority 1" projects the sub-component costs presented exclude the costs of mobilising the project (including further feasibility studies required), administering it and evaluating it. These costs are included in KIWMP Component 1 Programme Coordination and Management. Additional costs of basin out-reach of project results (e.g. research, international training and promotion of project outcomes) are also excluded: these appear in Component 4 Programme Capacity Building and Policy Development.

2.2.3 Project Expenditure Accounts

Expenditure Accounts are also given by sub-component. Again, these are summaries of the total costs of implementation during the first five years of programme, distributed between the following cost heads, each divided into investment costs and recurrent costs:

1. Research staff
2. Tuition fees
3. International consultants
4. Regional consultants
5. Local staff
6. Transport
7. Office and accommodation
8. Office furniture and equipment
9. Specialised equipment
10. Basin outreach
11. Civil works
12. Surveys
13. Credit and revolving funds
14. Agricultural inputs

15. Training
16. Administrative costs

An estimate of the proportion of local taxes and foreign exchange expenditure incurred under each sub-component is also given.

2.2.4 Project Disbursement Accounts

Disbursement Accounts are given by financier, i.e. those that will be responsible for purchasing resources to mobilise the project. Financiers are assumed to be:

1. The Nile Basin Trust Fund (NBTF)
2. NELSAP
3. Central Government
4. Line Ministries
5. Municipalities
6. NGOs
7. Local communities
8. Microfinance organisations
9. Parallel finance

Disbursement accounts have been identified as goods and services (investment costs) divided between:

1. Goods
2. Civil works
3. Research services
4. Consultancy services
5. Training services
6. Credit services
7. Other services

Disbursement accounts for operational costs have been identified as:

1. Travel, per diems and accommodation
2. Administration
3. Labour
4. Management
5. Vehicle operational costs
6. Operational costs of credit, training and out-reach
7. Operational and maintenance of civil works

The “Priority 1” projects presented to the consultant for inclusion in KIWMP are in the preliminary stages of formulation. No project appraisal documents or financing agreements exist for any of them. This means that funding mechanisms can only be suggested based on methods of operation for similar watershed and wetlands management projects. It is usual for example that expenditure with relatively high proportions of foreign exchange (international staff, imported equipment, civil works etc.) is funded by donor contributions, while local staff, management and administration costs and locally purchased goods and services are funded nationally. Some donor agencies are particularly interested in supporting NGO training operations and micro-financing institutions. It is almost universally held that users should pay for the operation and maintenance of investment through local financing mechanisms. The payment for the construction of soil and water conservation works is a more difficult issue: ideally it should be paid for by landowners, but where holdings are very small and tenure is insecure there are issues of moral hazard and community participation. Therefore it is assumed that parallel finance (i.e. funding by an unspecified donor) is directed to all civil works including soil and water conservation.

2.2.5 Procurement Arrangements

Procurement methods are specified within COSTAB according to standard international donor financing arrangements. Of the large number of methods specified those recommended for KIWMP are:

1. International competitive bidding (ICB)
2. National Competitive Billing (NCB)
3. International Shopping
4. Consultancy services Quality and Cost Based Selection (QCBS)
5. Non-bank Finance (NBF).

Since the nature and terms of parallel financing is not known it is assumed that procurement under parallel financing will be NBF.

Procurement Accounts are defined as follows;

1. Regional research
2. International consultancy
3. Regional consultancy
4. Airfares and travel
5. Office, accommodation, administration and local staff
6. Vehicles
7. Equipment and surveys
8. Training and microcredit
9. Conferences
10. Civil works

Technical equipment and other goods costing US$ 150,000 and more per contract will be subject to International Competitive Bidding (ICB) requirements. For goods in the range between US$ 80,000-US$ 150,000 contracts may be awarded on the basis of National Competitive Bidding (NCB). For goods contracts below US$ 80,000 contracts will be awarded on the basis of the World Bank's Shopping procedure.

As much of work undertaken in this Programme is capacity building and technical assistance to the Kagera Sub-basin riparian countries, a large percentage of the expenditures will be for Consultants' Services, much of which will be based in the Kagera Sub-basin. Consultant firms, Universities and other Research Institutions financed under the Programme will be selected in accordance with Bank Consultant Guidelines through a Quality and Cost-Based Selection (QCBS). The regional and technical nature of this Programme will result in the possibility that a number of tasks and activities may best be undertaken by existing state owned universities or research institutions in the Kagera Sub-basin riparian countries. The Programme thus will involve contracting research institutions, think tanks and academic institutions that are government owned in the respective countries where the services are required to be rendered.

Training, workshops, conference attendance and study tours will be carried out on the basis of approved annual programs that will identify the general framework of training and similar activities for the year, including the nature of training/study tours/workshops, the number of participants, and cost estimates. For national training and workshops, preference will be given to consultants from the country in which the training is being organized, provided that a sufficient number of qualified individuals or firms (at least three) are available. For regional training, preference will be given to consultants from the Kagera Sub-basin riparian countries.

2.2.6 Project and Component Tables

The following tabulations are given for each of the 28 Priority 1 wetlands and WSM projects in Components 2 and 3:

- Sub-component cost summary in both local currency and US$
- Expenditure Accounts by sub-component, indicating the nature of the goods and services required to mobilize, execute and complete the project
- Disbursement Accounts by proposed financier, which gives an indication of the financing and procurement plans.

COSTAB can produce a variety of tabulations and those presented here have been chosen as most relevant in providing a general description of the projects in the portfolio. Further information can be obtained in the project fiches, including a specific financial plan, expenditure accounts phased over the implementation period and a consolidated procurement plan for each project.

Detailed Cost Tables for each project sub-component are not presented: this would require an additional 80 large tabulations. However, detailed cost tables are presented for Components 1 and 4, replacing the sub-component cost summaries.

For the consolidation of all this information into KIWMP summaries, please refer to section 4.

3. Cost Estimate by Component

3.1 Component 1: Programme Coordination and Management

Table 3-1 Component 1 Programme Coordination and Management Detailed Component Costs and Quantities

Kagera Basin
KAGERA BASIN Integrated Watershed Management Project: NELSAP Management, Administration and Capacity Building
Table 1. Coordination and Management
Detailed Costs

	Unit	Quantities 2010	2011	2012	2013	2014	Total	Unit Cost (US$)	Base Cost (US$ '000) 2010	2011	2012	2013	2014	Total	Parameters (Phy. Cont. Rate	For. Exch.
I. Investment Costs																
A. Project Preparation /a																
Internationally Recruited Staff	months	20	20	20	10	10	80	20,000	400	400	400	200	200	1,600	10.0	80.0
Regionally recruited staff	months	40	40	30	10	10	130	4,000	160	160	120	40	40	520	10.0	80.0
Locally recruited staff	months	48	48	36	24	24	180	1,500	72	72	54	36	36	270	10.0	0.0
Preparation of Wetland Research and Demo Projects	lump sum	1	-	-	-	-	1	116,227	116	-	-	-	-	116	10.0	80.0
Preparation of Basin Projects and R2	lump sum	1	-	-	-	-	1	229,157	229	-	-	-	-	229	10.0	80.0
Preparation of RW3 and T2	lump sum	1	-	-	-	-	1	102,034	102	-	-	-	-	102	10.0	80.0
Preparation of B1 and TW1	lump sum	0.5	0.5	-	-	-	1	3,744,944	1,872	1,872	-	-	-	3,745	10.0	80.0
Preparation of WSM Projects	lump sum	0.5	0.5	-	-	-	1	7,255,885	3,628	3,628	-	-	-	7,256	10.0	80.0
Preparation of Priority 2 projects	lump sum	-	-	-	0.5	0.5	1	1,000,000	-	-	-	500	500	1,000	10.0	80.0
Subtotal									6,580	6,132	574	776	776	14,838		
B. Procurement /b																
Internationally recruited staff	months	20	20	20	10	10	80	20,000	400	400	400	200	200	1,600	10.0	80.0
Regionally recruited staff	months	40	40	30	20	20	150	4,000	160	160	120	80	80	600	10.0	80.0
Locally recruited staff	months	48	48	36	24	24	180	1,500	72	72	54	36	36	270	10.0	0.0
Subtotal									632	632	574	316	316	2,470		
C. Contract Management /c																
Internationally recruited staff	months	20	20	20	10	10	80	20,000	400	400	400	200	200	1,600	10.0	80.0
Regionally recruited staff	months	40	40	30	20	20	150	4,000	160	160	120	80	80	600	10.0	80.0
Locally recruited staff	months	48	48	36	24	24	180	1,500	72	72	54	36	36	270	10.0	0.0
Subtotal									632	632	574	316	316	2,470		
D. Fund Management /d																
Internationally recruited staff	months	20	20	20	10	10	80	20,000	400	400	400	200	200	1,600	10.0	100.0
Regionally recruited staff	months	40	40	30	20	20	150	4,000	160	160	120	80	80	600	10.0	100.0
Locally recruited staff	months	48	48	36	24	24	180	1,500	72	72	54	36	36	270	10.0	0.0
Subtotal									632	632	574	316	316	2,470		
E. National Liaison Officers /e																
Government staff in riparian states (part time)	months	24	24	24	24	24	120	4,000	96	96	96	96	96	480	10.0	0.0
Local support staff	months	24	24	24	24	24	120	4,000	96	96	96	96	96	480	10.0	0.0
Subtotal									192	192	192	192	192	960		
F. Transport																
Vehicles 4x4	unit	3	-	-	-	-	3	40,000	120	-	-	-	-	120	10.0	70.0
Saloon Car	unit	7	-	-	-	-	7	30,000	210	-	-	-	-	210	10.0	70.0
Mini Bus	unit	2	-	-	-	-	2	35,000	70	-	-	-	-	70	10.0	70.0
Bicycles	unit	-	-	-	-	-	-	-	-	-	-	-	-	-	10.0	0.0
Subtotal									400	-	-	-	-	400		
G. Office Equipment																
Office Furniture	set	7	-	-	-	-	7	10,000	70	-	-	-	-	70	10.0	20.0
Guest House Furniture	set	1	-	-	-	-	1	2,000	2	-	-	-	-	2	10.0	0.0
Computers	unit	20	-	-	-	-	20	800	16	-	-	-	-	16	10.0	70.0
Plan Printer	unit	-	-	-	-	-	-	-	-	-	-	-	-	-	10.0	0.0
DTP Printer	unit	10	-	-	-	-	10	500	5	-	-	-	-	5	10.0	70.0
Subtotal									93	-	-	-	-	93		
Total Investment Costs									9,161	8,220	2,488	1,916	1,916	23,701		
II. Recurrent Costs																
A. Per Diems																
International Staff	days	2,100	2,100	1,200	900	900	7,200	25	53	53	30	23	23	180	10.0	0.0
Regional Consultants	days	4,500	4,500	3,600	2,700	2,700	18,000	15	68	68	54	41	41	270	10.0	0.0
Subtotal									120	120	84	63	63	450		
B. Airfares																
International Flights	number	10	10	6	6	6	38	900	9	9	5	5	5	34	10.0	70.0
Regional Flights	number	22	22	18	16	16	94	500	11	11	9	8	8	47	10.0	70.0
Subtotal									20	20	14	13	13	81		
C. Local Staff																
Office staff	months	108	108	108	108	108	540	100	11	11	11	11	11	54	10.0	0.0
Guest house staff	months	36	36	36	36	36	180	75	3	3	3	3	3	14	10.0	0.0
Semi-skilled Labour	months	-	-	-	-	-	-	-	-	-	-	-	-	-	10.0	0.0
Unskilled Labour	months	-	-	-	-	-	-	-	-	-	-	-	-	-	10.0	0.0
Subtotal									14	14	14	14	14	68		
D. Transport																
Vehicle 4x4	months	36	36	36	36	36	180	600	22	22	22	22	22	108	10.0	70.0
Vehicle saloon car	months	84	84	84	84	84	420	400	34	34	34	34	34	168	10.0	70.0
Vehicle minibus	months	24	24	24	24	24	120	400	10	10	10	10	10	48	10.0	70.0
Subtotal									65	65	65	65	65	324		
E. Office and Accommodation																
Office rental	months	84	84	84	84	84	420	1,000	84	84	84	84	84	420	10.0	0.0
Office running costs	months	84	84	84	84	84	420	1,000	84	84	84	84	84	420	10.0	25.0
Software licences	months	-	-	-	-	-	-	-	-	-	-	-	-	-	10.0	0.0
Guest house rental	months	12	12	12	12	12	60	500	6	6	6	6	6	30	10.0	0.0
Meeting Place rental	number	6	12	12	12	12	54	100	1	1	1	1	1	5	10.0	0.0
Subtotal									175	175	175	175	175	875		
F. Fund and Technical Administration																
Audit Burundi projects	lump sum	0.09	0.11	0.19	0.32	0.29	1	2,823,795	254	311	537	904	819	2,824	10.0	10.0
Audit Rwanda projects	lump sum	0.19	0.14	0.18	0.28	0.21	1	1,177,713	224	165	212	330	247	1,178	10.0	10.0
Audit Tanzania projects	lump sum	0.17	0.14	0.23	0.22	0.24	1	1,041,233	177	146	239	229	250	1,041	10.0	10.0
Audit Uganda projects	lump sum	0.15	0.15	0.19	0.24	0.27	1	438,188	66	66	83	105	118	438	10.0	10.0
Audit Sub-basin projects	lump sum	0.13	0.13	0.31	0.22	0.21	1	4,238	1	1	1	1	1	4	10.0	10.0
Funds Monitoring and Flow	lump sum	4	4	4	4	4	20	500	2	2	2	2	2	10	10.0	0.0
External Auditing	lump sum	4	4	4	4	4	20	500	2	2	2	2	2	10	10.0	0.0
Project Management Board	lump sum	4	4	4	4	4	20	1,000	4	4	4	4	4	20	10.0	0.0
Project Advisory Panel	lump sum	4	4	4	4	4	20	1,000	4	4	4	4	4	20	10.0	0.0
Subtotal									733	700	1,085	1,581	1,447	5,545		
Total Recurrent Costs									1,126	1,093	1,436	1,910	1,777	7,343		
Total									10,287	9,313	3,924	3,826	3,693	31,045		

\a The costs of project preparation are based on project total cost, complexity and the degree of "investment readiness" and consolidated by country
\b About US$ 26 million of International procurement will be required to implement the first five years of KIWMP (52% consultancy, 34% vehicles and 8% equipment). Regional procurement will be only about US$ 10.6 million, required for consultants only
\c The budget for international consultancy in the first five years of KIWMP implementation is in the order of 45 person years, while about 163 years of regional consultancy is suggested.
\d Auditing at programme level will be carried out by independent accountants appointed by NELSAP
\e National Liaison Offices, headed by an appointed National Liaison Officer (NLO) will be established in each of the riparian states, to provide a link between projects and NELSAP.

Table 3-2 Component 1 Expenditure Accounts

Kagera Basin
KAGERA BASIN Integrated Watershed Management Project: NELSAP Management, Administration and Capacity Building
Expenditure Accounts Breakdown
(US$ '000)

	Base Cost				Physical Contingencies				Price Contingencies				Total Incl. Cont.				Base Costs + Price Cont. on Base Costs	Physical Cont. Plus Price Cont. on Physical Cont.
	For. Exch.	Local (Excl. Taxes)	Duties & Taxes	Total	For. Exch.	Local (Excl. Taxes)	Duties & Taxes	Total	For. Exch.	Local (Excl. Taxes)	Duties & Taxes	Total	For. Exch.	Local (Excl. Taxes)	Duties & Taxes	Total		
I. Investment Costs																		
A. Research Staff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C. Inernational Consultants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D. Regional Consultants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E. Local Staff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F. Transport	280	-0	120	400	28	-0	12	40	-	-	-	-	308	-0	132	440	400	40
G. Office and Accommodation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H. Office Furniture and Equipment	29	37	28	93	3	4	3	9	-	-	-	-	32	40	30	102	93	9
I. Hydro-meterological Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J. Alternative Livelihoods Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K. Basin Outreach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L. Civil Works	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M. Surveys	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N. Credit and Revolving Funds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
O. Training	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P. Administration Costs	2,200	923	308	3,430	220	92	31	343	-	-	-	-	2,420	1,015	338	3,773	3,430	343
Q. Project Preparation	15,175	4,401	203	19,778	1,517	440	20	1,978	-	-	-	-	16,692	4,841	223	21,756	19,778	1,978
Total Investment Costs	17,683	5,360	658	23,701	1,768	536	66	2,370	-	-	-	-	19,452	5,896	723	26,071	23,701	2,370
II. Recurrent Costs																		
A. Research Staff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C. International Consultants	-	126	54	180	-	13	5	18	-	-	-	-	-	139	59	198	180	18
D. Regional Consultants	-	270	-	270	-	27	-	27	-	-	-	-	-	297	-	297	270	27
E. Local Staff	-	47	20	68	-	5	2	7	-	-	-	-	-	52	22	74	68	7
F. Transport	284	-0	122	405	28	-0	12	41	-	-	-	-	312	-0	134	446	405	41
G. Office and Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H. Hydro-meterological Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J. Basin Outreach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K. Civil Works	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L. Surveys	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M. Credit and Revolving Funds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N. Training	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
O. Administration	654	4,126	1,641	6,421	65	413	164	642	-	-	-	-	719	4,538	1,805	7,063	6,421	642
Total Recurrent Costs	937	4,569	1,837	7,343	94	457	184	734	-	-	-	-	1,031	5,026	2,021	8,078	7,343	734
Total	18,620	9,929	2,495	31,045	1,862	993	249	3,104	-	-	-	-	20,482	10,922	2,744	34,149	31,045	3,104

Table 3-3 Component 1 Disbursement Accounts by Financier

Kagera Basin
KAGERA BASIN Integrated Watershed Management Project: NELSAP Management, Administration and Capacity Building
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%			
A. Goods and Services											
Research	-	-	-	-	-	-	-	-	-	-	-
Consultancy	27,810	94.9	-	-	1,508	5.1	29,319	85.9	19,715	8,095	1,508
Services by Local Staff	-	-	1,015	43.8	1,304	56.2	2,318	6.8	-	1,735	583
Training Services	-	-	-	-	-	-	-	-	-	-	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-
Other Services	-	-	-	-	-	-	-	-	-	-	-
Goods	380	70.0	-	-	163	30.0	542	1.6	340	40	162
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	28,190	87.6	1,015	3.2	2,975	9.2	32,179	94.2	20,055	9,870	2,254
B. Operational Costs											
Travel and Per Diem	498	85.2	-	-	86	14.8	584	1.7	63	436	86
Administration	-	-	-	-	-	-	-	-	-	-	-
Accommodation	-	-	-	-	963	100.0	963	2.8	116	560	287
Labour	-	-	-	-	-	-	-	-	-	-	-
Management	-	-	56	85.0	10	15.0	66	0.2	-	56	10
Vehicles	-	-	-	-	356	100.0	356	1.0	249	-	107
Credit	-	-	-	-	-	-	-	-	-	-	-
Training	-	-	-	-	-	-	-	-	-	-	-
Outreach	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	498	25.3	56	2.8	1,415	71.9	1,970	5.8	428	1,052	490
Total PROJECT COSTS	28,688	84.0	1,071	3.1	4,390	12.9	34,149	100.0	20,482	10,922	2,744

3.2 Component 2: Priority 1 Country Projects for Immediate Implementation

3.2.1 Burundi KIWMP

Project B1: Integrated Water Resources Management, Akanyaru Sub-watershed

Table 3-4 B1 IWRM Akanyaru Sub-watershed Cost Summary

Burundi
KAGERA BASIN Integrated Watershed Management Project: Project B-01 Integrated Watershed Management Akanyaru Sub-watershed
Components Project Cost Summary

	(Burundi Franc '000)			(US$ '000)			% Foreign	% Total Base
	Local	Foreign	Total	Local	Foreign	Total	Exchange	Costs
1. Soil and Water Conservation and Rehabilitation	38,566,790	6,306,688	44,873,478	29,990	4,904	34,894	14	26
2. Agro-forestry and Animal Husbandry	3,991,921	744,533	4,736,454	3,104	579	3,683	16	3
3. Riverbank Protection	1,424,221	392,814	1,817,034	1,107	305	1,413	22	1
4. Development of Irrigated Farming	53,289,654	5,876,956	59,166,610	41,438	4,570	46,008	10	35
5. Rural Roads	41,256,912	5,024,814	46,281,725	32,082	3,907	35,989	11	27
6. Potable Water Supply	1,301,467	210,492	1,511,960	1,012	164	1,176	14	1
7. Rural Electrification	7,813,363	947,255	8,760,617	6,076	737	6,812	11	5
8. Transboundary Cooperation and Coordination	715,685	167,411	883,096	557	130	687	19	1
9. Project Management and Administration	1,874,204	92,438	1,966,641	1,457	72	1,529	5	1
10. NELSAP NLO and PMB /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	150,234,215	19,763,400	169,997,616	116,823	15,368	132,191	12	100
Physical Contingencies	15,023,422	1,976,340	16,999,762	11,682	1,537	13,219	12	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	165,257,637	21,739,740	186,997,377	128,505	16,905	145,410	12	110

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\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-5 B1 IWRM Akanyaru Sub-watershed Expenditure Accounts by Sub-component

Burundi
KAGERA BASIN Integrated Watershed Management Project: Project B-01 Integrated Watershed Management Akanyaru Sub-watershed
Expenditure Accounts by Components - Totals Including Contingencies
(US$ '000)

	Soil and Water Conservation and Rehabilitation	Agro-forestry and Animal Husbandry	Riverbank Protection	Development of Irrigated Farming	Rural Roads	Potable Water Supply	Rural Electrification	Transboundary Cooperation and Coordination	Project Management and Administration	NELSAP NLO and PMB	Total
I. Investment Costs											
A. Research Staff /a	-	-	-	-	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-	-	-	-	-
C. Inernational Consultants	-	-	-	-	176	-	-	-	-	-	176
D. Regional Consultants	238	-	-	158	132	-	-	79	-	-	607
E. Local Staff	6,397	867	867	4,048	264	462	462	396	1,056	-	14,818
F. Transport	580	205	215	561	176	88	88	88	44	-	2,044
G. Office and Accommodation	-	-	-	-	-	-	-	-	-	-	-
H. Office Furniture and Equipment	13	4	4	74	4	4	4	16	14	-	136
I. Hydro-meterological Equipment	113	11	51	86	44	22	22	-	-	-	349
J. Alternative Livelihoods Equipment	-	-	-	-	-	-	-	-	-	-	-
K. Basin Outreach	-	-	-	-	-	-	-	-	-	-	-
L. Civil Works	26,750	2,008	158	34,760	33,000	330	6,284	-	-	-	103,291
M. Surveys	-	-	-	-	-	-	-	-	372	-	372
N. Credit and Revolving Funds	-	-	-	1,144	-	-	-	-	-	-	1,144
O. Agricultural Inputs	-	-	-	-	-	-	-	-	-	-	-
P. Training	167	167	22	718	-	88	88	41	-	-	1,292
Q. Administration Costs	-	-	-	-	-	-	-	-	-	-	-
Total Investment Costs	34,258	3,261	1,317	41,549	33,796	994	6,948	621	1,485	-	124,228
II. Recurrent Costs											
A. Research Staff	-	-	-	-	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-	-	-	-	-
C. International Consultants	-	-	-	-	7	-	-	-	-	-	7
D. Regional Consultants	27	-	-	18	15	-	-	4	-	-	64
E. Local Staff	187	31	31	297	66	102	-	17	25	-	756
F. Transport	525	152	152	482	177	79	79	85	40	-	1,770
G. Office and Equipment	-	-	-	-	-	-	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-	-	-	-	-	-
J. Basin OUtreach	-	-	-	-	-	-	-	-	-	-	-
K. Civil Works	3,262	482	38	6,952	5,280	53	400	-	-	-	16,467
L. Surveys	-	-	-	-	248	-	-	-	-	-	248
M. Credit and Revolving Funds	-	-	-	114	-	-	-	-	-	-	114
N. Agricultural Inputs	-	-	-	-	-	-	-	-	-	-	-
O. Training	125	125	17	801	-	66	66	29	-	-	1,229
P. Administration	-	-	-	396	-	-	-	-	132	-	528
Total Recurrent Costs	4,126	790	237	9,060	5,792	300	546	135	197	-	21,182
Total PROJECT COSTS	38,383	4,051	1,554	50,609	39,588	1,293	7,494	755	1,682	-	145,410
Taxes	2,398	396	380	1,922	247	230	199	206	393	-	6,373
Foreign Exchange	5,395	637	336	5,027	4,298	180	810	143	79	-	16,905

Table 3-6 B1 IWRM Akanyau Sub-watershed Disbursement Accounts by Financier

Burundi
KAGERA BASIN Integrated Watershed Management Project: Project B-01 Integrated Watershed Management Akanyaru Sub-watershed
Disbursement Accounts by Financiers
(US$ '000)

	NBTF		NELSAP		Central Government		Non Government Organisations		Local Communities		Microfinance		Parallel Financing		Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Exch.	Taxes)	Taxes
A. Goods and Services																			
Research /a	425	70.0	-	-	182	30.0	-	-	-	-	-	-	-	-	607	0.4	-	425	182
Consultancy	176	100.0	-	-	-	-	-	-	-	-	-	-	-	-	176	0.1	176	-	-
Services by Local Staff	-	-	-	-	14,818	100.0	-	-	-	-	-	-	-	-	14,818	10.2	-	10,373	4,445
Training Services	14	1.1	-	-	636	49.3	642	49.7	-	-	-	-	-	-	1,292	0.9	14	1,278	-
Credit Services	-	-	-	-	-	-	-	-	-	-	1,144	100.0	-	-	1,144	0.8	-	1,144	-
Other Services	-	-	334	90.0	37	10.0	-	-	-	-	-	-	-	-	372	0.3	-	372	-
Goods	1,715	67.8	-	-	814	32.2	-	-	-	-	-	-	-	-	2,529	1.7	1,828	56	645
Works	-	-	-	-	1,842	1.5	-	-	14,275	11.9	-	-	103,640	86.5	119,757	82.4	13,611	106,147	-
Subtotal	2,330	1.7	334	0.2	18,330	13.0	642	0.5	14,275	10.1	1,144	0.8	103,640	73.7	140,695	96.8	15,629	119,794	5,272
B. Operational Costs																			
Travel and Per Diem	97	87.2	-	-	14	12.8	-	-	-	-	-	-	-	-	111	0.1	29	68	14
Administration	39	5.0	-	-	737	95.0	-	-	-	-	-	-	-	-	776	0.5	33	584	158
Accommodation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Labour	-	-	-	-	756	100.0	-	-	-	-	-	-	-	-	756	0.5	-	529	227
Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	1,729	100.0	-	-	-	-	-	-	-	-	1,729	1.2	1,210	-	519
Credit	-	-	-	-	-	-	-	-	-	-	114	100.0	-	-	114	0.1	-	114	-
Training	1,046	85.2	-	-	182	14.8	-	-	-	-	-	-	-	-	1,229	0.8	4	1,042	182
Outreach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	1,182	25.1	-	-	3,418	72.5	-	-	-	-	114	2.4	-	-	4,715	3.2	1,276	2,338	1,101
Total PROJECT COSTS	3,512	2.4	334	0.2	21,748	15.0	642	0.4	14,275	9.8	1,258	0.9	103,640	71.3	145,410	100.0	16,905	122,132	6,373

Project B2: Stabilization of Banks of Watercourses and Hillside Afforestation

Table 3-7 B2 Stabilization of Banks of Watercourses and Hillside Afforestation Sub-component Cost Summary

Burundi
KAGERA BASIN Integrated Watershed Management Project: B2 Stabilisation of Banks of Water Courses and Hillside Aforestation
Components Project Cost Summary

	(Burundi Franc '000)			(US$ '000)			% Foreign	% Total Base
	Local	Foreign	Total	Local	Foreign	Total	Exchange	Costs
1. Soil and Water Conservation and Rehabilitation	33,011,575	4,510,626	37,522,201	25,670	3,507	29,177	12	47
2. Integrated Agro-forestry and Animal Husbandry	27,152,177	3,216,353	30,368,530	21,114	2,501	23,615	11	38
3. River bank Protection	10,249,139	1,015,709	11,264,848	7,970	790	8,760	9	14
4. Project Management and Administration	248,957	55,710	304,666	194	43	237	18	-
5. NELSAP NLO and PMB /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	70,661,848	8,798,397	79,460,245	54,947	6,842	61,789	11	100
Physical Contingencies	7,066,185	879,840	7,946,024	5,495	684	6,179	11	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	77,728,033	9,678,236	87,406,269	60,442	7,526	67,968	11	110

\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-8 B2 Stabilization of Banks of Watercourses and Hillside Afforestation Expenditure Accounts by Sub-component

Burundi

KAGERA BASIN Integrated Watershed Management Project: B2 Stabilisation of Banks of Water Courses and Hillside Aforestation

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Soil and Water Conservation and Rehabilitation	Integrated Agro-forestry and Animal Husbandry	River bank Protection	Project Management and Administration	NELSAP NLO and PMB	Total
I. Investment Costs						
A. Research Staff /a	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-
C. Inernational Consultants	-	-	198	-	-	198
D. Regional Consultants	-	-	44	-	-	44
E. Local Staff	6,020	4,860	1,154	-	-	12,034
F. Transport	871	523	176	-	-	1,570
G. Office and Accommodation	-	-	-	-	-	-
H. Office Furniture and Equipment	92	12	2	13	-	118
I. Hydro-meterological Equipment	110	-	59	-	-	169
J. Alternative Livelihoods Equipment	-	-	-	-	-	-
K. Basin Outreach	-	-	-	-	-	-
L. Civil Works	19,392	9,696	6,468	-	-	35,556
M. Surveys	33	-	-	42	-	75
N. Credit and Revolving Funds	-	-	-	-	-	-
O. Training	607	326	143	-	-	1,076
P. Administration Costs	-	-	-	13	-	13
Q. Agricultural INputs	-	7,980	-	-	-	7,980
Total Investment Costs	27,126	23,395	8,243	68	-	58,832
II. Recurrent Costs						
A. Research Staff	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-
C. International Consultants	8	-	7	-	-	16
D. Regional Consultants	-	-	8	-	-	8
E. Local Staff	-	-	-	20	-	20
F. Transport	1,056	594	235	40	-	1,924
G. Office and Equipment	-	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	48	-	-	-	48
J. Basin OUtreach	-	-	-	-	-	-
K. Civil Works	3,103	1,939	1,035	-	-	6,077
L. Surveys	-	-	-	-	-	-
M. Credit and Revolving Funds	-	-	-	-	-	-
N. Training	455	-	107	-	-	563
O. Administration	347	-	-	134	-	481
Total Recurrent Costs	4,969	2,581	1,392	193	-	9,136
Total PROJECT COSTS	32,095	25,976	9,636	261	-	67,968
Taxes	2,575	2,182	501	65	-	5,324
Foreign Exchange	3,858	2,751	869	48	-	7,526

Table 3-9 B2 Stabilization of Banks of Watercourses and Hillside Afforestation Disbursement Accounts by Financier

Burundi
KAGERA BASIN Integrated Watershed Management Project: B2 Stabilisation of Banks of Water Courses and Hillside Aforestation
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Line Ministries		Non Government Organisations		Local Communities		Microfinance		Parallel Finance		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%			
A. Goods and Services																					
Research /a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Consultancy	229	94.5	-	-	13	5.5	-	-	-	-	-	-	-	-	-	-	242	0.4	198	31	13
Services by Local Staff	-	-	-	-	12,034	100.0	-	-	-	-	-	-	-	-	-	-	12,034	17.7	-	8,424	3,610
Training Services	469	43.6	-	-	304	28.2	-	-	304	28.2	-	-	-	-	-	-	1,076	1.6	-	1,076	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Services	-	-	47	85.2	8	14.8	-	-	-	-	-	-	-	-	-	-	55	0.1	-	51	4
Goods	1,282	67.8	-	-	607	32.2	-	-	-	-	-	-	-	-	-	-	1,889	2.8	1,347	44	498
Works	-	-	-	-	3,295	7.1	14,062	30.2	-	-	3,103	6.7	-	-	26,179	56.1	46,639	68.6	4,340	41,913	386
Subtotal	1,979	3.2	47	0.1	16,261	26.3	14,062	22.7	304	0.5	3,103	5.0	-	-	26,179	42.3	61,935	91.1	5,886	51,538	4,511
B. Operational Costs																					
Travel and Per Diem	26	77.0	-	-	8	23.0	-	-	-	-	-	-	-	-	-	-	34	0.1	7	19	8
Administration	17	5.0	-	-	330	95.0	-	-	-	-	-	-	-	-	-	-	347	0.5	83	164	101
Accommodation	-	-	-	-	132	100.0	-	-	-	-	-	-	-	-	-	-	132	0.2	17	76	40
Labour	-	-	-	-	20	29.4	-	-	-	-	48	70.6	-	-	-	-	67	0.1	-	61	6
Management	-	-	1	85.0	0	15.0	-	-	-	-	-	-	-	-	-	-	2	-	-	1	0
Vehicles	-	-	-	-	1,914	100.0	-	-	-	-	-	-	-	-	-	-	1,914	2.8	1,340	-0	574
Credit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Training	478	85.0	-	-	84	15.0	-	-	-	-	-	-	-	-	-	-	563	0.8	-	478	84
Outreach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	259	8.7	776	26.1	-	-	1,939	65.2	-	-	-	-	2,974	4.4	194	2,780	-
Subtotal	522	8.6	1	-	2,747	45.5	776	12.9	-	-	1,987	32.9	-	-	-	-	6,033	8.9	1,640	3,580	813
Total PROJECT COSTS	2,501	3.7	48	0.1	19,008	28.0	14,838	21.8	304	0.4	5,089	7.5	-	-	26,179	38.5	67,968	100.0	7,526	55,118	5,324

Project B3: Hill irrigation and rainwater harvesting

Table 3-10 B3 Hill Irrigation and Rainfall Harvesting Sub Component Cost Summary

Burundi
KAGERA BASIN Integrated Watershed Management Project: B3 Hill Irrigation and Rainw ater Harvesting in Cankuzo, Karuzi, Muyinga and Ruyigi Provinces
Components Project Cost Summary

	(Burundi Franc '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Sustainable Management of Wetlands	23,126,125	2,814,038	25,940,163	17,983	2,188	20,171	11	37
2. Hillside Irrigation Using Motor Pumps	13,276,857	1,715,974	14,992,831	10,324	1,334	11,659	11	21
3. Rainw ater Harvesting and Micro-irrigation	10,717,717	1,570,656	12,288,373	8,334	1,221	9,556	13	17
4. Village Level Potable Water Supply and Roads	4,896,316	682,352	5,578,668	3,807	531	4,338	12	8
5. Value Chain Addition and Agricultural Credit	10,688,846	373,969	11,062,815	8,312	291	8,603	3	16
6. NELSAP NLO and PMB (Wetlands) /a	323,916	55,710	379,626	252	43	295	15	1
Total BASELINE COSTS	63,029,778	7,212,698	70,242,476	49,012	5,609	54,621	10	100
Physical Contingencies	6,302,978	721,270	7,024,248	4,901	561	5,462	10	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	69,332,756	7,933,968	77,266,724	53,913	6,169	60,083	10	110

\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-11 B3 Hill Irrigation and Rainwater Harvesting Expenditure Accounts by Sub-component

Burundi

KAGERA BASIN Integrated Watershed Management Project: B3 Hill Irrigation and Rainwater Harvesting in Cankuzo, Karuzi, Muyinga and Ruyigi Province

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Sustainable Management of Wetlands	Hillside Irrigation Using Motor Pumps	Rainwater Harvesting and Micro-irrigation	Village Level Potable Water Supply and Roads	Value Chain Addition and Agricultural Credit	NELSAP NLO and PMB (Wetlands)	Total
I. Investment Costs							
A. Research Staff /a	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-
C. Inernational Consultants	-	-	-	-	-	-	-
D. Regional Consultants	92	92	92	-	-	-	277
E. Local Staff	1,760	1,602	880	726	726	-	5,694
F. Transport	261	261	261	176	176	-	1,134
G. Office and Accommodation	-	-	-	-	-	-	-
H. Office Furniture and Equipment	64	59	15	-	-	13	150
I. Hydro-meterological Equipment	61	28	61	-	-	-	149
J. Alternative Livelihoods Equipment	-	-	-	-	-	-	-
K. Basin Outreach	-	-	-	-	-	-	-
L. Civil Works	16,830	8,003	6,160	2,915	858	-	34,766
M. Surveys	-	-	-	-	-	106	106
N. Credit and Revolving Funds	-	-	-	-	5,899	-	5,899
O. Training	235	123	97	123	1,553	-	2,132
P. Administration Costs	-	-	-	-	-	13	13
Q. Agricultural INputs	-	-	-	-	-	-	-
Total Investment Costs	19,303	10,167	7,565	3,940	9,212	132	50,319
II. Recurrent Costs							
A. Research Staff	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-
C. International Consultants	-	-	-	-	-	-	-
D. Regional Consultants	10	10	10	-	-	-	31
E. Local Staff	26	26	26	-	-	20	99
F. Transport	296	296	296	158	158	40	1,244
G. Office and Equipment	-	-	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-	-
J. Basin OUtreach	-	-	-	-	-	-	-
K. Civil Works	1,848	1,650	2,008	581	-	-	6,086
L. Surveys	-	-	-	-	-	-	-
M. Credit and Revolving Funds	-	-	-	-	-	-	-
N. Training	177	135	66	92	92	-	563
O. Administration	528	540	540	-	-	134	1,741
Total Recurrent Costs	2,885	2,658	2,946	832	251	193	9,764
Total PROJECT COSTS	22,188	12,824	10,511	4,772	9,463	325	60,083
Taxes	933	878	638	332	332	65	3,178
Foreign Exchange	2,407	1,468	1,343	584	320	48	6,169

Table 3-12 B3 Hill Irrigation and Rainfall Harvesting Disbursement Accounts by Financier

Burundi
KAGERA BASIN Integrated Watershed Management Project: B3 Hill Irrigation and Rainw ater Harvesting in Cankuzo, Karuzi, Muyinga and Ruyigi Provinces
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Line Ministries		Non Government Organisations		Local Communities		Microfinance		Parallel Finance		Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Exch.	Taxes)	Taxes
A. Goods and Services																					
Research /a	194	70.0	-	-	83	30.0	-	-	-	-	-	-	-	-	-	-	277	0.5	-	194	83
Consultancy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Services by Local Staff	-	-	-	-	5,694	100.0	-	-	-	-	-	-	-	-	-	-	5,694	9.5	-	3,986	1,708
Training Services	1,676	78.6	-	-	228	10.7	-	-	228	10.7	-	-	-	-	-	-	2,132	3.5	-	2,132	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-	-	5,899	100.0	-	-	5,899	9.8	-	5,899	-
Other Services	-	-	104	87.8	15	12.2	-	-	-	-	-	-	-	-	-	-	119	0.2	-	115	4
Goods	945	65.9	-	-	488	34.1	-	-	-	-	-	-	-	-	-	-	1,433	2.4	999	53	381
Works	-	-	-	-	-	-	-	-	-	-	3,658	9.1	-	-	36,614	90.9	40,271	67.0	4,027	36,244	-
Subtotal	2,815	5.0	104	0.2	6,507	11.7	-	-	228	0.4	3,658	6.6	5,899	10.6	36,614	65.6	55,825	92.9	5,026	48,623	2,176
B. Operational Costs																					
Travel and Per Diem	43	89.6	-	-	5	10.4	-	-	-	-	-	-	-	-	-	-	48	0.1	12	31	5
Administration	80	5.0	-	-	1,527	95.0	-	-	-	-	-	-	-	-	-	-	1,607	2.7	198	934	475
Accommodation	-	-	-	-	132	100.0	-	-	-	-	-	-	-	-	-	-	132	0.2	17	76	40
Labour	-	-	-	-	99	100.0	-	-	-	-	-	-	-	-	-	-	99	0.2	-	69	30
Management	-	-	1	85.0	0	15.0	-	-	-	-	-	-	-	-	-	-	2	-	-	1	0
Vehicles	-	-	-	-	1,228	100.0	-	-	-	-	-	-	-	-	-	-	1,228	2.0	859	-	368
Credit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Training	478	85.0	-	-	84	15.0	-	-	-	-	-	-	-	-	-	-	563	0.9	-	478	84
Outreach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	-	-	290	50.0	-	-	290	50.0	-	-	-	-	581	1.0	58	523	-
Subtotal	601	14.1	1	-	3,075	72.2	290	6.8	-	-	290	6.8	-	-	-	-	4,258	7.1	1,143	2,113	1,002
Total PROJECT COSTS	3,417	5.7	106	0.2	9,582	15.9	290	0.5	228	0.4	3,948	6.6	5,899	9.8	36,614	60.9	60,083	100.0	6,169	50,735	3,178

Project BW1: Protection of Wetland Ecosystems through Environmental Flows

Table 3-13 BW1 Protection of Wetland Ecosystems Sub Component Cost Summary

Burundi
KAGERA BASIN Integrated Watershed Management Project: BW1 Protection of Ecosystems Through Environmental Flow s
Components Project Cost Summary

	(Burundi Franc '000)			(US$ '000)			% Foreign	% Total Base
	Local	Foreign	Total	Local	Foreign	Total	Exchange	Costs
1. Protecting Wetland Ecosystems through Environmental Flow and Sustainable Extractions	471,473	388,629	860,103	367	302	669	45	100
2. NELSAP NLO and PMB (Wetlands) /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	471,473	388,629	860,103	367	302	669	45	100
Physical Contingencies	47,147	38,863	86,010	37	30	67	45	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	518,621	427,492	946,113	403	332	736	45	110

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\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-14 BW1 Protection of Wetland Ecosystems Expenditure Accounts by Sub-component

Burundi

KAGERA BASIN Integrated Watershed Management Project: BW1 Protection of Ecosystems Through Environmental Flow s

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Protecting Wetland Ecosystems through Environmental Flow and Sustainable Extractions	NELSAP NLO and PMB (Wetlands)	Total
I. Investment Costs			
A. Research Staff /a	-	-	-
B. Tuition Fees	-	-	-
C. Inernational Consultants	198	-	198
D. Regional Consultants	176	-	176
E. Local Staff	80	-	80
F. Transport	45	-	45
G. Office and Accommodation	-	-	-
H. Office Furniture and Equipment	9	-	9
I. Hydro-meterological Equipment	11	-	11
J. Alternative Livelihoods Equipment	-	-	-
K. Basin Outreach	-	-	-
L. Civil Works	-	-	-
M. Surveys	45	-	45
N. Credit and Revolving Funds	-	-	-
O. Training	-	-	-
P. Administration Costs	-	-	-
Total Investment Costs	564	-	564
II. Recurrent Costs			
A. Research Staff	-	-	-
B. Tuition Fees	-	-	-
C. International Consultants	7	-	7
D. Regional Consultants	27	-	27
E. Local Staff	24	-	24
F. Transport	69	-	69
G. Office and Equipment	-	-	-
H. Hrdro-metereological Equipment	-	-	-
I. Alternative Livelihoods Equipment	-	-	-
J. Basin OUtreach	14	-	14
K. Civil Works	-	-	-
L. Surveys	-	-	-
M. Credit and Revolving Funds	-	-	-
N. Training	-	-	-
O. Administration	31	-	31
Total Recurrent Costs	172	-	172
Total PROJECT COSTS	736	-	736
Taxes	131	-	131
Foreign Exchange	332	-	332

Table 3-15 BW1 Protection of Wetland Ecosystems Disbursement Accounts by Financier

Burundi
KAGERA BASIN Integrated Watershed Management Project: BW1 Protection of Ecosystems Through Environmental Flows
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Exch.	Taxes)	Taxes
A. Goods and Services											
Research /a	-	-	-	-	-	-	-	-	-	-	-
Consultancy	321	85.9	-	-	53	14.1	374	50.8	198	123	53
Services by Local Staff	-	-	-	-	80	100.0	80	10.9	-	56	24
Training Services	-	-	-	-	-	-	-	-	-	-	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-
Other Services	-	-	6	90.0	1	10.0	6	0.8	-	6	-
Goods	73	70.7	-	-	30	29.3	103	14.0	86	2	15
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	394	69.9	6	1.0	164	29.1	564	76.6	284	188	91
B. Operational Costs											
Travel and Per Diem	56	82.0	-	-	12	18.0	68	9.3	24	32	12
Administration	2	5.0	-	-	29	95.0	31	4.2	-	22	9
Accommodation	-	-	-	-	-	-	-	-	-	-	-
Labour	-	-	-	-	24	100.0	24	3.3	-	17	7
Management	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	35	100.0	35	4.8	24	-0	10
Credit	-	-	-	-	-	-	-	-	-	-	-
Training	-	-	-	-	-	-	-	-	-	-	-
Outreach	-	-	12	90.0	1	10.0	14	1.9	-	14	-
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	58	33.4	12	7.2	102	59.4	172	23.4	48	85	39
Total PROJECT COSTS	452	61.4	18	2.4	266	36.2	736	100.0	332	273	131

Project BW2: Alternative Livelihoods for Wetland Communities

Table 3-16 BW2 Alternative Livelihoods Sub-component Cost Summary

Burundi
KAGERA BASIN Integrated Watershed Management Project: BW2 Alternative Livelihoods for Wetlands Communities
Components Project Cost Summary

	(Burundi Franc '000)			(US$ '000)			% Foreign	% Total Base
	Local	Foreign	Total	Local	Foreign	Total	Exchange	Costs
1. Alternative Livelihoods in Wetlands	941,728	397,438	1,339,166	732	309	1,041	30	100
2. NELSAP NLO and PMB (Wetlands) /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	941,728	397,438	1,339,166	732	309	1,041	30	100
Physical Contingencies	94,173	39,744	133,917	73	31	104	30	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	1,035,900	437,182	1,473,082	806	340	1,145	30	110

\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-17 BW2 Alternative Livelihoods Expenditure Accounts by Sub-component

Burundi

KAGERA BASIN Integrated Watershed Management Project: BW2 Alternative Livelihoods for Wetlands Communities

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Alternative Livelihoods in Wetlands	NELSAP NLO and PMB (Wetlands)	Total
I. Investment Costs			
A. Research Staff /a	-	-	-
B. Tuition Fees	-	-	-
C. Inernational Consultants	198	-	198
D. Regional Consultants	216	-	216
E. Local Staff	66	-	66
F. Transport	45	-	45
G. Office and Accommodation	-	-	-
H. Office Furniture and Equipment	4	-	4
I. Hydro-meterological Equipment	35	-	35
J. Alternative Livelihoods Equipment	65	-	65
K. Basin Outreach	-	-	-
L. Civil Works	-	-	-
M. Surveys	31	-	31
N. Credit and Revolving Funds	110	-	110
O. Training	33	-	33
P. Administration Costs	128	-	128
Total Investment Costs	930	-	930
II. Recurrent Costs			
A. Research Staff	-	-	-
B. Tuition Fees	-	-	-
C. International Consultants	7	-	7
D. Regional Consultants	39	-	39
E. Local Staff	19	-	19
F. Transport	69	-	69
G. Office and Equipment	-	-	-
H. Hrdro-metereological Equipment	-	-	-
I. Alternative Livelihoods Equipment	-	-	-
J. Basin OUtreach	11	-	11
K. Civil Works	-	-	-
L. Surveys	-	-	-
M. Credit and Revolving Funds	6	-	6
N. Training	33	-	33
O. Administration	32	-	32
Total Recurrent Costs	215	-	215
Total PROJECT COSTS	1,145	-	1,145
Taxes	196	-	196
Foreign Exchange	340	-	340

Table 3-18 BW2 Alternative Livelihoods Disbursement Accounts by Financier

Burundi
KAGERA BASIN Integrated Watershed Management Project: BW2 Alternative Livelihoods for Wetlands Communities
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Line Ministries		Non Government Organisations		Microfinance		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%			
A. Goods and Services																	
Research /a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Consultancy	349	84.4	-	-	65	15.6	-	-	-	-	-	-	414	36.1	198	151	65
Services by Local Staff	-	-	-	-	66	100.0	-	-	-	-	-	-	66	5.8	-	46	20
Training Services	-	-	-	-	-	-	-	-	33	100.0	-	-	33	2.9	-	33	-
Credit Services	-	-	-	-	-	-	-	-	-	-	110	100.0	110	9.6	-	110	-
Other Services	-	-	100	71.7	39	28.3	-	-	-	-	-	-	140	12.2	-	101	38
Goods	74	44.1	-	-	48	28.8	45	27.1	-	-	-	-	168	14.7	94	40	34
Works	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	423	45.5	100	10.8	218	23.5	45	4.9	33	3.5	110	11.8	930	81.2	292	482	156
B. Operational Costs																	
Travel and Per Diem	68	84.6	-	-	12	15.4	-	-	-	-	-	-	80	7.0	24	44	12
Administration	2	5.0	-	-	30	95.0	-	-	-	-	-	-	32	2.8	-	23	9
Accommodation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Labour	-	-	-	-	19	100.0	-	-	-	-	-	-	19	1.6	-	13	6
Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	35	100.0	-	-	-	-	-	-	35	3.1	24	-0	10
Credit	-	-	-	-	-	-	-	-	-	-	6	100.0	6	0.5	-	6	-
Training	-	-	-	-	2	7.5	-	-	31	92.5	-	-	33	2.9	-	31	2
Outreach	-	-	10	90.0	1	10.0	-	-	-	-	-	-	11	1.0	-	11	-
Works	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	69	32.2	10	4.6	100	46.4	-	-	31	14.2	6	2.6	215	18.8	48	128	40
Total PROJECT COSTS	492	43.0	110	9.6	319	27.8	45	4.0	64	5.5	116	10.1	1,145	100.0	340	609	196

Project BW3: Impacts on Wetlands of Water Harvesting and Groundwater Development

Table 3-19 BW3 Impacts on Wetlands of Water Harvesting and Groundwater Development Sub-component Cost Summary

Burundi
KAGERA BASIN Integrated Watershed Management Project: BW3 The Impacts on Wetlands of Water harvesting
Components Project Cost Summary

	(Burundi Franc '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Impact on Wetlands of Water Harvesting and Development of Groundwater Resources	608,243	359,591	967,835	473	280	753	37	100
2. NELSAP NLO and PMB (Wetlands) /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	608,243	359,591	967,835	473	280	753	37	100
Physical Contingencies	60,824	35,959	96,783	47	28	75	37	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	669,068	395,550	1,064,618	520	308	828	37	110

\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-20 BW3 Impacts on Wetlands of Water Harvesting and Groundwater Development Expenditure Accounts by Sub-component

Burundi

KAGERA BASIN Integrated Watershed Management Project: BW3 The Impacts on Wetlands of Water harvesting

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Impact on Wetlands of Water Harvesting and Development of Groundwater Resources	NELSAP NLO and PMB (Wetlands)	Total
I. Investment Costs			
A. Research Staff /a	-	-	-
B. Tuition Fees	-	-	-
C. Inernational Consultants	198	-	198
D. Regional Consultants	308	-	308
E. Local Staff	50	-	50
F. Transport	45	-	45
G. Office and Accommodation	-	-	-
H. Office Furniture and Equipment	21	-	21
I. Hydro-meterological Equipment	12	-	12
J. Alternative Livelihoods Equipment	-	-	-
K. Basin Outreach	-	-	-
L. Civil Works	2	-	2
M. Surveys	9	-	9
N. Credit and Revolving Funds	-	-	-
O. Training	-	-	-
P. Administration Costs	-	-	-
Total Investment Costs	644	-	644
II. Recurrent Costs			
A. Research Staff	-	-	-
B. Tuition Fees	-	-	-
C. International Consultants	7	-	7
D. Regional Consultants	37	-	37
E. Local Staff	24	-	24
F. Transport	69	-	69
G. Office and Equipment	-	-	-
H. Hrdro-metereological Equipment	-	-	-
I. Alternative Livelihoods Equipment	-	-	-
J. Basin OUtreach	14	-	14
K. Civil Works	2	-	2
L. Surveys	-	-	-
M. Credit and Revolving Funds	-	-	-
N. Training	-	-	-
O. Administration	31	-	31
Total Recurrent Costs	184	-	184
Total PROJECT COSTS	828	-	828
Taxes	160	-	160
Foreign Exchange	308	-	308

Table 3-21 BW3 Impacts on Wetlands of Water Harvesting and Groundwater Development Disbursement Accounts by Financier

Burundi
KAGERA BASIN Integrated Watershed Management Project: BW3 The Impacts on Wetlands of Water harvesting
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Line Ministries		Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Exch.	Taxes)	Taxes
A. Goods and Services													
Research /a	-	-	-	-	-	-	-	-	-	-	-	-	-
Consultancy	414	81.7	-	-	92	18.3	-	-	506	61.1	198	216	92
Services by Local Staff	-	-	-	-	50	100.0	-	-	50	6.0	-	35	15
Training Services	-	-	-	-	-	-	-	-	-	-	-	-	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Services	-	-	8	90.0	1	10.0	-	-	9	1.1	-	9	-
Goods	25	74.7	-	-	8	25.3	-	-	33	4.0	30	2	1
Works	-	-	-	-	-	-	2	100.0	2	0.3	0	2	-
Subtotal	438	73.1	8	1.3	151	25.2	2	0.4	600	72.4	228	263	108
B. Operational Costs													
Travel and Per Diem	66	84.2	-	-	12	15.8	-	-	78	9.4	24	42	12
Administration	2	5.0	-	-	29	95.0	-	-	31	3.7	-	22	9
Accommodation	-	-	-	-	-	-	-	-	-	-	-	-	-
Labour	-	-	-	-	24	100.0	-	-	24	2.9	-	17	7
Management	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	80	100.0	-	-	80	9.6	55	0	24
Credit	-	-	-	-	-	-	-	-	-	-	-	-	-
Training	-	-	-	-	-	-	-	-	-	-	-	-	-
Outreach	-	-	12	90.0	1	10.0	-	-	14	1.7	-	14	-
Works	-	-	-	-	0	25.0	1	75.0	2	0.2	0	1	-
Subtotal	67	29.5	12	5.4	147	64.5	1	0.5	228	27.6	79	97	52
Total PROJECT COSTS	506	61.1	20	2.4	298	36.0	4	0.4	828	100.0	308	360	160

3.2.2 Rwanda KIWMP

Project R1: SWC, Soil Improvement, Improved Fodder Production and Reforestation

Table 3-22 R1 SWC, Soil Improvement, Improved Fodder Production and Reforestation Sub-component Cost Summary

Rwanda
KAGERA BASIN Integrated Watershed Management Project: R1 SWC, Soil Improvement, Improved Fodder Production & Reforestation: Nyaguru District in Akanyaru Sub-watershed
Components Project Cost Summary

	(Rwanda Franc '000)			(US$ '000)			% Foreign	% Total Base
	Local	Foreign	Total	Local	Foreign	Total	Exchange	Costs
1. Soil Conservation and Soil Fertility Enhancement	18,741,689	1,930,168	20,671,857	30,724	3,164	33,888	9	74
2. Improved Fodder Production and Increased Livestock Productivity	1,591,649	278,306	1,869,955	2,609	456	3,066	15	7
3. Water harvesting and Pump Irrigation Schemes	4,121,903	663,288	4,785,191	6,757	1,087	7,845	14	17
4. Value Chain Addition	562,664	185,196	747,860	922	304	1,226	25	3
5. Project Management and Administration	40,046	4,450	44,496	66	7	73	10	-
6. NELSAP NLO and PMB /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	25,057,950	3,061,408	28,119,358	41,079	5,019	46,097	11	100
Physical Contingencies	2,505,795	306,141	2,811,936	4,108	502	4,610	11	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	27,563,745	3,367,549	30,931,294	45,186	5,521	50,707	11	110

/a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-23 R1 SWC, Soil Improvement, Improved Fodder Production and Reforestation Expenditure Accounts by Sub-component

Rwanda

KAGERA BASIN Integrated Watershed Management Project: R1 SWC, Soil Improvement, Improved Fodder Production & Reforestation: Nyaguru District in Akanyaru Sub-watershed

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Soil Conservation and Soil Fertility Enhancement	Improved Fodder Production and Increased Livestock Productivity	Water harvesting and Pump Irrigation Schemes	Value Chain Addition	Project Management and Administration	NELSAP NLO and PMB	Total
I. Investment Costs							
A. Research Staff /a	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-
C. Inernational Consultants	-	-	-	-	-	-	-
D. Regional Consultants	88	-	176	-	-	-	264
E. Local Staff	12,414	-	-	-	-	-	12,414
F. Transport	888	265	371	-	-	-	1,524
G. Office and Accommodation	-	-	-	-	-	-	-
H. Office Furniture and Equipment	195	5	7	-	-	-	207
I. Hydro-meterological Equipment	234	-	6	-	-	-	239
J. Alternative Livelihoods Equipment	-	-	13	-	-	-	13
K. Basin Outreach	-	-	-	-	-	-	-
L. Civil Works	15,961	413	5,640	903	-	-	22,917
M. Surveys	-	-	-	-	-	-	-
N. Credit and Revolving Funds	-	-	-	-	-	-	-
O. Training	509	858	286	-	-	-	1,653
P. Administration Costs	-	-	-	-	80	-	80
Q. Agricultural Inputs	-	558	-	446	-	-	1,004
Total Investment Costs	30,289	2,098	6,499	1,349	80	-	40,315
II. Recurrent Costs							
A. Research Staff	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-
C. International Consultants	-	-	-	-	-	-	-
D. Regional Consultants	10	-	20	-	-	-	30
E. Local Staff	277	-	-	-	-	-	277
F. Transport	1,070	370	296	-	-	-	1,736
G. Office and Equipment	-	-	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-	-
J. Basin OUtreach	-	-	-	-	-	-	-
K. Civil Works	3,189	132	1,556	-	-	-	4,878
L. Surveys	-	-	-	-	-	-	-
M. Credit and Revolving Funds	-	-	-	-	-	-	-
N. Training	594	772	257	-	-	-	1,624
O. Administration	1,848	-	-	-	-	-	1,848
Total Recurrent Costs	6,989	1,274	2,130	-	-	-	10,392
Total PROJECT COSTS	37,277	3,372	8,629	1,349	80	-	50,707
Taxes	5,112	307	297	134	-	-	5,850
Foreign Exchange	3,481	502	1,196	334	8	-	5,521

Table 3-24 R1 SWV, Soil Improvement, Improved Fodder Production and Reforestation Disbursement Accounts by Financers

Rwanda

KAGERA BASIN Integrated Watershed Management Project: R1 SWC, Soil Improvement, Improved Fodder Production & Reforestation: Nyaguru District in Akanyaru Sub-watershed

Disbursement Accounts by Financiers

(US$ '000)

	Donor		NELSAP		Central Government		Line Ministries		Non Government Organisations		Local Communities		Parallel Finance		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%			
A. Goods and Services																			
Research /a	185	70.0	-	-	79	30.0	-	-	-	-	-	-	-	-	264	0.5	-	185	79
Consultancy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Services by Local Staff	-	-	-	-	12,414	100.0	-	-	-	-	-	-	-	-	12,414	24.5	-	8,689	3,724
Training Services	-	-	-	-	571	34.5	-	-	1,082	65.5	-	-	-	-	1,653	3.3	-	1,653	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Services	-	-	72	13.7	142	26.9	312	59.3	-	-	-	-	-	-	526	1.0	142	250	134
Goods	1,676	65.9	-	-	859	33.8	7	0.3	-	-	-	-	-	-	2,541	5.0	1,362	668	512
Works	-	-	-	-	-	-	903	3.7	-	-	1,688	6.9	22,014	89.5	24,606	48.5	2,571	22,035	-
Subtotal	1,860	4.4	72	0.2	14,065	33.5	1,222	2.9	1,082	2.6	1,688	4.0	22,014	52.4	42,004	82.8	4,075	33,481	4,448
B. Operational Costs																			
Travel and Per Diem	37	92.5	-	-	3	7.5	-	-	-	-	-	-	-	-	40	0.1	7	30	3
Administration	92	5.0	-	-	1,756	95.0	-	-	-	-	-	-	-	-	1,848	3.6	231	1,063	554
Accommodation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Labour	-	-	-	-	277	8.0	-	-	-	-	3,189	92.0	-	-	3,466	6.8	-	3,383	83
Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	1,726	100.0	-	-	-	-	-	-	-	-	1,726	3.4	1,208	-0	518
Credit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Training	1,380	85.0	-	-	244	15.0	-	-	-	-	-	-	-	-	1,624	3.2	-	1,380	244
Outreach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	1,509	17.3	-	-	4,005	46.0	-	-	-	-	3,189	36.6	-	-	8,703	17.2	1,446	5,856	1,402
Total PROJECT COSTS	3,369	6.6	72	0.1	18,070	35.6	1,222	2.4	1,082	2.1	4,878	9.6	22,014	43.4	50,707	100.0	5,521	39,336	5,850

Project R2: Hill Rainwater Harvesting, Small scale Irrigation, Fruit and Fodder Trees

Table 3-25 R2 Hill Rainwater Harvesting, Small scale Irrigation, Fruit and Fodder Trees Sub-component Cost Summary

Rwanda
KAGERA BASIN Integrated Watershed Management Project: R2 Rainwater Harvesting, Smallscale Irrigation, Fruit and Fodder Trees Kagitumba Sub-watershed
Components Project Cost Summary

	(Rwanda Franc '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Soil Conservation and Soil Fertility Enhancement	23,398,594	2,498,450	25,897,044	38,358	4,096	42,454	10	74
2. Improved Fodder Production and Increased Livestock Productivity	1,602,324	278,306	1,880,630	2,627	456	3,083	15	5
3. Water harvesting and Pump Irrigation Schemes	4,115,071	663,288	4,778,359	6,746	1,087	7,833	14	14
4. Alternative Livelihoods	1,104,795	335,781	1,440,576	1,811	550	2,362	23	4
5. Value Chain Addition	669,216	213,607	882,823	1,097	350	1,447	24	3
6. Project Management and Administration	71,518	7,946	79,465	117	13	130	10	-
7. NELSAP NLO and PMB /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	30,961,517	3,997,378	34,958,896	50,757	6,553	57,310	11	100
Physical Contingencies	3,096,152	399,738	3,495,890	5,076	655	5,731	11	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	34,057,669	4,397,116	38,454,785	55,832	7,208	63,041	11	110

/a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-26 R2 Hill Rainwater Harvesting, Small scale Irrigation, Fruit and Fodder Trees Expenditure Accounts by Sub-component

Rwanda
KAGERA BASIN Integrated Watershed Management Project: R2 Rainwater Harvesting, Smallscale Irrigation, Fruit and Fodder Trees Kagitumba Sub-watershed
Expenditure Accounts by Components - Totals Including Contingencies
(US$ '000)

	Soil Conservation and Soil Fertility Enhancement	Improved Fodder Production and Increased Livestock Productivity	Water harvesting and Pump Irrigation Schemes	Alternative Livelihoods	Value Chain Addition	Project Management and Administration	NELSAP NLO and PMB	Total
I. Investment Costs								
A. Research Staff /a	-	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-	-
C. Inernational Consultants	-	-	-	-	-	-	-	-
D. Regional Consultants	88	-	176	176	-	-	-	440
E. Local Staff	15,779	-	-	-	-	-	-	15,779
F. Transport	1,097	265	371	371	-	-	-	2,104
G. Office and Accommodation	-	-	-	-	-	-	-	-
H. Office Furniture and Equipment	255	5	7	7	-	-	-	275
I. Hydro-meterological Equipment	474	-	6	6	-	-	-	485
J. Alternative Livelihoods Equipment	-	-	1	1,379	-	-	-	1,380
K. Basin Outreach	-	-	-	-	-	-	-	-
L. Civil Works	19,481	413	5,640	-	1,012	-	-	26,545
M. Surveys	-	-	-	-	-	-	-	-
N. Credit and Revolving Funds	-	-	-	-	-	-	-	-
O. Training	672	858	286	172	-	-	-	1,988
P. Administration Costs	-	-	-	-	-	143	-	143
Q. Agricultural Inputs	-	578	-	-	580	-	-	1,157
Total Investment Costs	37,846	2,118	6,487	2,110	1,592	143	-	50,297
II. Recurrent Costs								
A. Research Staff	-	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-	-
C. International Consultants	-	-	-	-	-	-	-	-
D. Regional Consultants	10	-	20	20	-	-	-	50
E. Local Staff	307	-	-	-	-	-	-	307
F. Transport	1,361	370	296	296	-	-	-	2,322
G. Office and Equipment	-	-	-	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-	-	-
J. Basin OUtreach	-	-	-	-	-	-	-	-
K. Civil Works	4,175	132	1,556	-	-	-	-	5,863
L. Surveys	-	-	-	-	-	-	-	-
M. Credit and Revolving Funds	-	-	-	-	-	-	-	-
N. Training	625	772	257	172	-	-	-	1,827
O. Administration	2,376	-	-	-	-	-	-	2,376
Total Recurrent Costs	8,853	1,274	2,130	487	-	-	-	12,744
Total PROJECT COSTS	46,700	3,391	8,617	2,598	1,592	143	-	63,041
Taxes	6,459	307	293	694	174	-	-	7,927
Foreign Exchange	4,505	502	1,196	606	385	14	-	7,208

Table 3-27 R2: Hill Rainwater Harvesting, Small scale Irrigation, Fruit and Fodder Trees Disbursement Accounts by Financiers

Rwanda
KAGERA BASIN Integrated Watershed Management Project: R2 Rainnwater Harvesting, Smallscale Irrigation, Fruit and Fodder Trees Kagitumba Sub-watershed
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Line Ministries		Non Government Organisations		Local Communities		Parallel Finance		Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Exch.	Taxes)	Taxes
A. Goods and Services																			
Research /a	308	70.0	-	-	132	30.0	-	-	-	-	-	-	-	-	440	0.7	-	308	132
Consultancy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Services by Local Staff	-	-	-	-	15,779	100.0	-	-	-	-	-	-	-	-	15,779	25.0	-	11,045	4,734
Training Services	-	-	-	-	663	33.4	-	-	1,324	66.6	-	-	-	-	1,988	3.2	-	1,988	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Services	-	-	129	17.8	188	26.0	406	56.1	-	-	-	-	-	-	723	1.1	188	361	174
Goods	2,287	47.4	-	-	1,844	38.2	690	14.3	-	-	-	-	-	-	4,821	7.6	2,164	1,545	1,112
Works	-	-	-	-	-	-	1,012	3.6	-	-	1,688	6.0	25,533	90.4	28,234	44.8	2,933	25,301	-
Subtotal	2,595	5.0	129	0.2	18,607	35.8	2,108	4.1	1,324	2.5	1,688	3.2	25,533	49.1	51,985	82.5	5,286	40,547	6,152
B. Operational Costs																			
Travel and Per Diem	60	92.9	-	-	5	7.1	-	-	-	-	-	-	-	-	65	0.1	11	50	5
Administration	119	5.0	-	-	2,257	95.0	-	-	-	-	-	-	-	-	2,376	3.8	297	1,366	713
Accommodation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Labour	-	-	-	-	307	6.8	-	-	-	-	4,175	93.2	-	-	4,481	7.1	-	4,389	92
Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	2,307	100.0	-	-	-	-	-	-	-	-	2,307	3.7	1,615	-0	692
Credit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Training	1,553	85.0	-	-	274	15.0	-	-	-	-	-	-	-	-	1,827	2.9	-	1,553	274
Outreach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	1,732	15.7	-	-	5,149	46.6	-	-	-	-	4,175	37.8	-	-	11,056	17.5	1,922	7,358	1,775
Total PROJECT COSTS	4,327	6.9	129	0.2	23,756	37.7	2,108	3.3	1,324	2.1	5,863	9.3	25,533	40.5	63,041	100.0	7,208	47,905	7,927

Project R3: Feasibility Study for Fisheries Development in Lake Muhazi

Table 3-28 R3 Feasibility Study for Fisheries Development in Lake Muhazi Sub-component Cost Summary

Rwanda
KAGERA BASIN Integrated Watershed Management Project: R3 Feasibility Study for Fisheries Development in Lake Muhazi
Components Project Cost Summary

	(Rwanda Franc '000)			(US$ '000)			% Foreign	% Total Base
	Local	Foreign	Total	Local	Foreign	Total	Exchange	Costs
1. Feasibility Study for Fisheries Development in Lake Muhazi	98,003	221,454	319,457	161	363	524	69	100
2. NELSAP NLO and PMB (Wetlands) /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	98,003	221,454	319,457	161	363	524	69	100
Physical Contingencies	9,800	22,145	31,946	16	36	52	69	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	107,803	243,600	351,403	177	399	576	69	110

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\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-29 R3 Feasibility Study for Fisheries Development in Lake Muhazi Expenditure Accounts by Sub-component

Rwanda

KAGERA BASIN Integrated Watershed Management Project: R3 Feasibility Study for Fisheries Development in Lake Muhazi

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Feasibility Study for Fisheries Development in Lake Muhazi	NELSAP NLO and PMB (Wetlands)	Total
I. Investment Costs			
A. Research Staff /a	-	-	-
B. Tuition Fees	-	-	-
C. Inernational Consultants	198	-	198
D. Regional Consultants	40	-	40
E. Local Staff	53	-	53
F. Transport	44	-	44
G. Office and Accommodation	-	-	-
H. Office Furniture and Equipment	5	-	5
I. Hydro-meterological Equipment	143	-	143
J. Alternative Livelihoods Equipment	-	-	-
K. Basin Outreach	-	-	-
L. Civil Works	-	-	-
M. Surveys	8	-	8
N. Credit and Revolving Funds	-	-	-
O. Training	-	-	-
P. Administration Costs	-	-	-
Total Investment Costs	490	-	490
II. Recurrent Costs			
A. Research Staff	-	-	-
B. Tuition Fees	-	-	-
C. International Consultants	7	-	7
D. Regional Consultants	4	-	4
E. Local Staff	6	-	6
F. Transport	17	-	17
G. Office and Equipment	-	-	-
H. Hrdro-metereological Equipment	-	-	-
I. Alternative Livelihoods Equipment	-	-	-
J. Basin OUtreach	-	-	-
K. Civil Works	-	-	-
L. Surveys	18	-	18
M. Credit and Revolving Funds	-	-	-
N. Training	-	-	-
O. Administration	33	-	33
Total Recurrent Costs	86	-	86
Total PROJECT COSTS	576	-	576
Taxes	61	-	61
Foreign Exchange	399	-	399

\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administra

Table 3-30 R3 Feasibility Study for Fisheries Development in Lake Muhazi Disbursement Accounts by Financiers

Rwanda
KAGERA BASIN Integrated Watershed Management Project: R3 Feasibility Study for Fisheries Development in Lake M
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%			
A. Goods and Services											
Research /a	-	-	-	-	-	-	-	-	-	-	-
Consultancy	226	95.0	-	-	12	5.0	238	41.2	198	28	12
Services by Local Staff	-	-	-	-	53	100.0	53	9.2	-	37	16
Training Services	-	-	-	-	-	-	-	-	-	-	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-
Other Services	-	-	-	-	-	-	-	-	-	-	-
Goods	148	73.9	-	-	52	26.1	200	34.7	186	-0	14
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	373	76.1	-	-	117	23.9	490	85.1	384	65	41
B. Operational Costs											
Travel and Per Diem	16	76.3	-	-	5	23.7	21	3.7	6	10	5
Administration	3	5.0	-	-	48	95.0	51	8.8	3	38	10
Accommodation	-	-	-	-	-	-	-	-	-	-	-
Labour	-	-	-	-	6	100.0	6	1.1	-	4	2
Management	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	8	100.0	8	1.4	6	-	2
Credit	-	-	-	-	-	-	-	-	-	-	-
Training	-	-	-	-	-	-	-	-	-	-	-
Outreach	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	19	21.7	-	-	67	78.3	86	14.9	15	52	19
Total PROJECT COSTS	392	68.0	-	-	184	32.0	576	100.0	399	116	61

Project RW1: Protecting Wetland Ecosystems

Table 3-31 RW1 Protecting Wetland Ecosystems Sub-component Cost Summary

Rwanda
KAGERA BASIN Integrated Watershed Management Project: RW1 The Development Of Tools for the Integrated Management of Wetlands
Components Project Cost Summary

	(Rwanda Franc '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Protecting Wetland Ecosystems through Environmental Flow and Sustainable Extractions	224,529	184,342	408,871	368	302	670	45	100
2. NELSAP NLO and PMB (Wetlands) /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	224,529	184,342	408,871	368	302	670	45	100
Physical Contingencies	22,453	18,434	40,887	37	30	67	45	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	246,982	202,776	449,758	405	332	737	45	110

\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-32 RW1 Protecting Wetland Ecosystems Expenditure Accounts by Sub-component

Rwanda

KAGERA BASIN Integrated Watershed Management Project: RW1 The Development Of Tools for the Integrated Management of Wetlands

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Protecting Wetland Ecosystems through Environmental Flow and Sustainable Extractions	NELSAP NLO and PMB (Wetlands)	Total
I. Investment Costs			
A. Research Staff /a	-	-	-
B. Tuition Fees	-	-	-
C. Inernational Consultants	198	-	198
D. Regional Consultants	176	-	176
E. Local Staff	80	-	80
F. Transport	45	-	45
G. Office and Accommodation	-	-	-
H. Office Furniture and Equipment	9	-	9
I. Hydro-meterological Equipment	11	-	11
J. Alternative Livelihoods Equipment	-	-	-
K. Basin Outreach	-	-	-
L. Civil Works	-	-	-
M. Surveys	46	-	46
N. Credit and Revolving Funds	-	-	-
O. Training	-	-	-
P. Administration Costs	-	-	-
Total Investment Costs	565	-	565
II. Recurrent Costs			
A. Research Staff	-	-	-
B. Tuition Fees	-	-	-
C. International Consultants	7	-	7
D. Regional Consultants	27	-	27
E. Local Staff	24	-	24
F. Transport	69	-	69
G. Office and Equipment	-	-	-
H. Hrdro-metereological Equipment	-	-	-
I. Alternative Livelihoods Equipment	-	-	-
J. Basin OUtreach	14	-	14
K. Civil Works	-	-	-
L. Surveys	-	-	-
M. Credit and Revolving Funds	-	-	-
N. Training	-	-	-
O. Administration	31	-	31
Total Recurrent Costs	172	-	172
Total PROJECT COSTS	737	-	737
Taxes	131	-	131
Foreign Exchange	332	-	332

Table 3-33 RW1 Protecting Wetland Ecosystems Disbursement Accounts by Financers

Rwanda
KAGERA BASIN Integrated Watershed Management Project: RW1 The Development Of Tools for the Integrated Management of Wetlands
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%			
A. Goods and Services											
Research /a	-	-	-	-	-	-	-	-	-	-	-
Consultancy	321	85.9	-	-	53	14.1	374	50.7	198	123	53
Services by Local Staff	-	-	-	-	80	100.0	80	10.9	-	56	24
Training Services	-	-	-	-	-	-	-	-	-	-	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-
Other Services	-	-	7	90.0	1	10.0	8	1.0	-	8	-
Goods	73	70.7	-	-	30	29.3	103	14.0	86	2	15
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	394	69.7	7	1.2	164	29.0	565	76.7	284	189	91
B. Operational Costs											
Travel and Per Diem	56	82.0	-	-	12	18.0	68	9.3	24	32	12
Administration	2	5.0	-	-	29	95.0	31	4.2	-	22	9
Accommodation	-	-	-	-	-	-	-	-	-	-	-
Labour	-	-	-	-	24	100.0	24	3.3	-	17	7
Management	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	35	100.0	35	4.7	24	-0	10
Credit	-	-	-	-	-	-	-	-	-	-	-
Training	-	-	-	-	-	-	-	-	-	-	-
Outreach	-	-	12	90.0	1	10.0	14	1.9	-	14	-
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	58	33.4	12	7.2	102	59.4	172	23.3	48	85	39
Total PROJECT COSTS	452	61.3	19	2.6	266	36.1	737	100.0	332	274	131

Project RW2: Artificial Wetlands for Sustainable Urban Drainage

Table 3-34 RW2 Artificial Wetlands for Sustainable Urban Drainage Sub-Component Cost Summary

Rwanda
KAGERA BASIN Integrated Watershed Management Project: RW2 Artifiicial Wetlands for Sustainable Urban Drainage
Components Project Cost Summary

	(Rwanda Franc '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Artificial Wetlands for Sustainable Urban Drainage	401,725	235,344	637,069	659	386	1,044	37	100
2. NELSAP NLO and PMB (Wetlands) /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	401,725	235,344	637,069	659	386	1,044	37	100
Physical Contingencies	40,172	23,534	63,707	66	39	104	37	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	441,897	258,879	700,776	724	424	1,149	37	110

\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-35 RW2 Artificial Wetlands for Sustainable Urban Drainage Expenditure Accounts by Sub-components

Rwanda
KAGERA BASIN Integrated Watershed Management Project: RW2 Artifiicial Wetlands for Sustainable Urban Drainage
Expenditure Accounts by Components - Totals Including Contingencies
(US$ '000)

	Artificial Wetlands for Sustainable Urban Drainage	NELSAP NLO and PMB (Wetlands)	Total
I. Investment Costs			
A. Research Staff /a	-	-	-
B. Tuition Fees	-	-	-
C. Inernational Consultants	198	-	198
D. Regional Consultants	176	-	176
E. Local Staff	105	-	105
F. Transport	44	-	44
G. Office and Accommodation	-	-	-
H. Office Furniture and Equipment	15	-	15
I. Hydro-meterological Equipment	35	-	35
J. Alternative Livelihoods Equipment	-	-	-
K. Basin Outreach	-	-	-
L. Civil Works	88	-	88
M. Surveys	50	-	50
N. Credit and Revolving Funds	-	-	-
O. Training	3	-	3
P. Administration Costs	26	-	26
Total Investment Costs	740	-	740
II. Recurrent Costs			
A. Research Staff	-	-	-
B. Tuition Fees	-	-	-
C. International Consultants	7	-	7
D. Regional Consultants	30	-	30
E. Local Staff	18	-	18
F. Transport	69	-	69
G. Office and Equipment	-	-	-
H. Hrdro-metereological Equipment	-	-	-
I. Alternative Livelihoods Equipment	-	-	-
J. Basin OUtreach	11	-	11
K. Civil Works	149	-	149
L. Surveys	-	-	-
M. Credit and Revolving Funds	-	-	-
N. Training	5	-	5
O. Administration	120	-	120
Total Recurrent Costs	409	-	409
Total PROJECT COSTS	1,149	-	1,149
Taxes	173	-	173
Foreign Exchange	424	-	424

Table 3-36 RW2 Artificial Wetlands for Sustainable Urban Drainage Disbursement Accounts by Financiers

Rwanda
KAGERA BASIN Integrated Watershed Management Project: RW2 Artifiicial Wetlands for Sustainable Urban Drainage
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Municipality		Parallel Finance		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%			
A. Goods and Services															
Research /a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Consultancy	321	85.9	-	-	53	14.1	-	-	-	-	374	32.6	198	123	53
Services by Local Staff	-	-	-	-	105	100.0	-	-	-	-	105	9.1	-	73	31
Training Services	3	100.0	-	-	-	-	-	-	-	-	3	0.3	-	3	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Services	-	-	18	70.0	8	30.0	-	-	-	-	26	2.3	-	18	8
Goods	105	72.9	-	-	39	27.1	-	-	-	-	144	12.5	121	6	17
Works	-	-	-	-	-	-	-	-	88	100.0	88	7.7	15	73	-
Subtotal	430	58.0	18	2.5	204	27.6	-	-	88	11.9	740	64.4	334	297	109
B. Operational Costs															
Travel and Per Diem	58	82.6	-	-	12	17.4	-	-	-	-	71	6.2	24	35	12
Administration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accommodation	-	-	-	-	120	100.0	-	-	-	-	120	10.4	15	69	36
Labour	-	-	-	-	18	100.0	-	-	-	-	18	1.6	-	12	5
Management	-	-	1	85.0	0	15.0	-	-	-	-	1	0.1	-	1	0
Vehicles	-	-	-	-	35	100.0	-	-	-	-	35	3.0	24	-0	10
Credit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Training	5	100.0	-	-	-	-	-	-	-	-	5	0.4	-	5	-
Outreach	-	-	10	90.0	1	10.0	-	-	-	-	11	1.0	-	11	-
Works	-	-	-	-	-	-	149	100.0	-	-	149	12.9	27	121	-
Subtotal	63	15.5	10	2.6	186	45.6	149	36.4	-	-	409	35.6	90	254	64
Total PROJECT COSTS	493	42.9	29	2.5	390	34.0	149	12.9	88	7.7	1,149	100.0	424	551	173

3.2.3 Tanzania KIWMP

Project T1: Soil Conservation in Karagwe and Ngara Districts

Table 3-37 T1 Soil Conservation in Karagwe and Ngara Districts Sub-component Cost Summary

Tanzania
KAGERA BASIN Integrated Watershed Management Project: T1 Soil Conservation in Karagwe and Ngara Districts
Components Project Cost Summary

	(Tanzanian shilling '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. SWC and Land Management Awareness Raising	18,294,441	2,757,681	21,052,122	12,270	1,850	14,119	13	46
2. Restoration of Abandoned Mining Areas	11,746,605	1,435,550	13,182,155	7,878	963	8,841	11	29
3. Reafforestation and Technical Training	6,225,864	288,389	6,514,254	4,176	193	4,369	4	14
4. Environmental Coordination	3,357,553	288,389	3,645,942	2,252	193	2,445	8	8
5. Project Management and Administration	762,462	187,121	949,582	511	126	637	20	2
6. NELSAP NLO and PMB /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	40,386,925	4,957,130	45,344,055	27,087	3,325	30,412	11	100
Physical Contingencies	4,038,692	495,713	4,534,405	2,709	332	3,041	11	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	44,425,617	5,452,843	49,878,460	29,796	3,657	33,453	11	110

\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-38 T1 Soil Conservation in Karagwe and Ngara Districts Expenditure Accounts by Sub-component

Tanzania
KAGERA BASIN Integrated Watershed Management Project: T1 Soil Conservation in Karagwe and Ngara Districts
Expenditure Accounts by Components - Totals Including Contingencies
(US$ '000)

	SWC and Land Management Awareness Raising	Restoration of Abandoned Mining Areas	Reafforestation and Technical Training	Environmental Coordination	Project Management and Administration	NELSAP NLO and PMB	Total
I. Investment Costs							
A. Research Staff /a	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-
C. Inernational Consultants	-	-	-	-	-	-	-
D. Regional Consultants	62	13	132	132	-	-	339
E. Local Staff	1,100	1,584	1,650	1,650	264	-	6,248
F. Transport	554	199	166	166	33	-	1,119
G. Office and Accommodation	-	-	-	-	-	-	-
H. Office Furniture and Equipment	7	4	-	-	29	-	40
I. Hydro-meterological Equipment	34	19	-	-	-	-	53
J. Alternative Livelihoods Equipment	-	-	-	-	-	-	-
K. Basin Outreach	-	-	-	-	-	-	-
L. Civil Works	11,278	6,607	2,136	-	-	-	20,020
M. Surveys	25	13	-	-	78	-	117
N. Credit and Revolving Funds	-	-	-	-	-	-	-
O. Training	-	-	248	204	-	-	451
P. Administration Costs	-	-	-	-	-	-	-
Total Investment Costs	13,060	8,439	4,331	2,152	405	-	28,387
II. Recurrent Costs							
A. Research Staff	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-
C. International Consultants	-	-	-	-	-	-	-
D. Regional Consultants	9	1	15	12	-	-	37
E. Local Staff	69	69	-	-	36	-	174
F. Transport	391	160	128	128	26	-	834
G. Office and Equipment	-	-	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-	-
J. Basin OUtreach	-	-	-	-	-	-	-
K. Civil Works	1,804	1,056	-	-	-	-	2,860
L. Surveys	198	-	99	99	-	-	396
M. Credit and Revolving Funds	-	-	-	-	-	-	-
N. Training	-	-	233	299	-	-	531
O. Administration	-	-	-	-	233	-	233
Total Recurrent Costs	2,471	1,286	475	538	296	-	5,066
Total PROJECT COSTS	15,531	9,725	4,806	2,690	701	-	33,453
Taxes	652	607	645	645	165	-	2,714
Foreign Exchange	2,035	1,059	213	213	138	-	3,657

Table 3-39 T1 Soil Conservation and Karagwe and Ngara Districts Disbursement Accounts by Financiers

Tanzania
KAGERA BASIN Integrated Watershed Management Project: T1 Soil Conservation in Karagwe and Ngara Districts
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Line Ministries		Non Government Organisations		Local Communities		Parallel Finance		Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Exch.	Taxes)	Taxes
A. Goods and Services																			
Research /a	52	70.0	-	-	22	30.0	-	-	-	-	-	-	-	-	75	0.2	-	52	22
Consultancy	185	70.0	-	-	79	30.0	-	-	-	-	-	-	-	-	264	0.8	-	185	79
Services by Local Staff	-	-	-	-	5,170	82.7	-	-	1,078	17.3	-	-	-	-	6,248	18.7	-	4,374	1,874
Training Services	451	100.0	-	-	-	-	-	-	-	-	-	-	-	-	451	1.3	11	440	-
Other Services	-	-	71	90.0	8	10.0	-	-	-	-	-	-	-	-	78	0.2	-	78	-
Goods	880	70.0	-	-	377	30.0	-	-	-	-	-	-	-	-	1,257	3.8	903	12	342
Works	-	-	-	-	1,788	7.8	2,136	9.3	-	-	2,860	12.5	16,090	70.3	22,874	68.4	2,074	20,800	-
Subtotal	1,569	5.0	71	0.2	7,444	23.8	2,136	6.8	1,078	3.4	2,860	9.2	16,090	51.5	31,248	93.4	2,988	25,942	2,318
B. Operational Costs																			
Travel and Per Diem	50	90.1	-	-	5	9.9	-	-	-	-	-	-	-	-	55	0.2	13	37	5
Administration	31	5.0	-	-	598	95.0	-	-	-	-	-	-	-	-	629	1.9	83	497	50
Accommodation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Labour	-	-	-	-	174	100.0	-	-	-	-	-	-	-	-	174	0.5	-	122	52
Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	816	100.0	-	-	-	-	-	-	-	-	816	2.4	571	-0	245
Training	487	91.6	-	-	45	8.4	-	-	-	-	-	-	-	-	531	1.6	3	483	45
Outreach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	568	25.8	-	-	1,637	74.2	-	-	-	-	-	-	-	-	2,205	6.6	670	1,139	396
Total PROJECT COSTS	2,137	6.4	71	0.2	9,082	27.1	2,136	6.4	1,078	3.2	2,860	8.6	16,090	48.1	33,453	100.0	3,657	27,081	2,714

Project T2: Urban and Rural Water Supply Kayanga, Bunazi and Kyaka

Table 3-40 T2 Urban and Rural Water Supply Sub-component Cost Summary

Tanzania
KAGERA BASIN Integrated Watershed Management Project: T2 Karagwe District Urban and Rural Water Supply Project
Components Project Cost Summary

	(Tanzanian shilling '000)			(US$ '000)			% Foreign	% Total Base
	Local	Foreign	Total	Local	Foreign	Total	Exchange	Costs
1. Feasibility Study and Civil Works Design	56,360	1,627,277	1,683,637	38	1,091	1,129	97	6
2. Urban Water Supply for Kayanga, Bunazi and Kyaka Townships	4,480,187	3,150,304	7,630,491	3,005	2,113	5,118	41	28
3. Rural Water Supply	8,055,172	4,546,462	12,601,634	5,403	3,049	8,452	36	47
4. Project Management and Administration	4,782,585	181,231	4,963,816	3,208	122	3,329	4	18
5. NELSAP NLO and PMB /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	17,374,304	9,505,274	26,879,578	11,653	6,375	18,028	35	100
Physical Contingencies	1,737,430	950,527	2,687,958	1,165	638	1,803	35	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	19,111,734	10,455,802	29,567,536	12,818	7,013	19,831	35	110

\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-41 T2 Urban and Rural Water Supply Expenditure Accounts by Sub-component

Tanzania

KAGERA BASIN Integrated Watershed Management Project: T2 Karagw e District Urban and Rural Water Supply Project

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Feasibility Study and Civil Works Design	Urban Water Supply for Kayanga, Bunazi and Kyaka Townships	Rural Water Supply	Project Management and Administration	NELSAP NLO and PMB	Total
I. Investment Costs						
A. Research Staff /a	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-
C. Inernational Consultants	1,056	-	-	-	-	1,056
D. Regional Consultants	-	-	-	-	-	-
E. Local Staff	-	-	-	2,860	-	2,860
F. Transport	121	1,205	127	33	-	1,485
G. Office and Accommodation	-	-	-	-	-	-
H. Office Furniture and Equipment	-	-	-	23	-	23
I. Hydro-meterological Equipment	-	-	-	-	-	-
J. Alternative Livelihoods Equipment	-	-	-	-	-	-
K. Basin Outreach	-	-	-	-	-	-
L. Civil Works	-	1,939	2,885	-	-	4,825
M. Surveys	-	-	-	305	-	305
N. Credit and Revolving Funds	-	-	-	-	-	-
O. Training	-	-	-	-	-	-
P. Administration Costs	-	-	-	128	-	128
Total Investment Costs	1,177	3,144	3,012	3,349	-	10,682
II. Recurrent Costs						
A. Research Staff	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-
C. International Consultants	48	-	-	-	-	48
D. Regional Consultants	-	-	-	-	-	-
E. Local Staff	-	553	832	43	-	1,428
F. Transport	18	210	106	26	-	359
G. Office and Equipment	-	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-
J. Basin OUtreach	-	-	-	-	-	-
K. Civil Works	-	1,230	4,809	-	-	6,039
L. Surveys	-	-	-	-	-	-
M. Credit and Revolving Funds	-	-	-	-	-	-
N. Training	-	14	19	-	-	33
O. Administration	-	479	519	244	-	1,242
Total Recurrent Costs	65	2,486	6,285	313	-	9,149
Total PROJECT COSTS	1,242	5,629	9,297	3,662	-	19,831
Taxes	42	590	319	984	-	1,935
Foreign Exchange	1,201	2,324	3,354	134	-	7,013

Table 3-42 T2 Urban and Rural Water Supply Disbursement Accounts by Financiers

Tanzania
KAGERA BASIN Integrated Watershed Management Project: T2 Karagw e District Urban and Rural Water Supply Project
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Non Government Organisations		Local Communities		Parallel Finance		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%			
A. Goods and Services																	
Research /a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Consultancy	1,104	100.0	-	-	-	-	-	-	-	-	-	-	1,104	5.6	1,104	-	-
Services by Local Staff	-	-	-	-	2,614	91.4	246	8.6	-	-	-	-	2,860	14.4	-	2,002	858
Training Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Services	-	-	364	84.1	69	15.9	-	-	-	-	-	-	433	2.2	-	395	38
Goods	1,056	70.0	-	-	452	30.0	-	-	-	-	-	-	1,508	7.6	1,049	7	452
Works	-	-	-	-	1,017	10.0	-	-	-	-	9,155	90.0	10,172	51.3	4,115	6,057	-
Subtotal	2,160	13.4	364	2.3	4,152	25.8	246	1.5	-	-	9,155	56.9	16,077	81.1	6,268	8,461	1,348
B. Operational Costs																	
Travel and Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Administration	12	5.0	-	-	222	95.0	-	-	-	-	-	-	233	1.2	83	101	50
Accommodation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Labour	-	-	-	-	1,428	100.0	-	-	-	-	-	-	1,428	7.2	-	999	428
Management	-	-	9	85.0	2	15.0	-	-	-	-	-	-	10	0.1	-	9	2
Vehicles	-	-	-	-	359	100.0	-	-	-	-	-	-	359	1.8	252	-0	108
Training	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Outreach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	-	-	-	-	1,723	100.0	-	-	1,723	8.7	411	1,312	-
Subtotal	12	0.3	9	0.2	2,010	53.6	-	-	1,723	45.9	-	-	3,754	18.9	745	2,422	587
Total PROJECT COSTS	2,171	10.9	373	1.9	6,162	31.1	246	1.2	1,723	8.7	9,155	46.2	19,831	100.0	7,013	10,883	1,935

Project T3: Protection and Conservation of Water Sources in Muleba and Birharamulo

Table 3-43 T3 Protection and Conservation of Water Sources in Muleba and Birharamulo Districts Sub-component Cost Summary

Tanzania
KAGERA BASIN Integrated Watershed Management Project: T3 Protection and Conservation of Water Sources in Muleba and Biharamulo Districts
Components Project Cost Summary

	(Tanzanian shilling '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Land Management Aw areness Raising	19,181,909	2,573,749	21,755,658	12,865	1,726	14,591	12	68
2. Technical Training for Land Restoration	5,297,940	288,389	5,586,330	3,553	193	3,747	5	17
3. Environmental Coordination	3,357,553	288,389	3,645,942	2,252	193	2,445	8	11
4. Project Management and Administration	762,462	187,121	949,582	511	126	637	20	3
5. NELSAP NLO and PMB /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	28,599,864	3,337,648	31,937,512	19,182	2,239	21,420	10	100
Physical Contingencies	2,859,986	333,765	3,193,751	1,918	224	2,142	10	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	31,459,850	3,671,413	35,131,263	21,100	2,462	23,562	10	110

\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-44 T3 Protection and Conservation of Water Sources in Muleba and Birharamulo Districts Expenditure Accounts by Sub-component

Tanzania

KAGERA BASIN Integrated Watershed Management Project: T3 Protection and Conservation of Water Sources in Muleba and Biharamulo Districts

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Land Management Awareness Raising	Technical Training for Land Restoration	Environmental Coordination	Project Management and Administration	NELSAP NLO and PMB	Total
I. Investment Costs						
A. Research Staff /a	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-
C. Inernational Consultants	-	-	-	-	-	-
D. Regional Consultants	62	132	132	-	-	326
E. Local Staff	1,100	1,650	1,650	264	-	4,664
F. Transport	554	166	166	33	-	920
G. Office and Accommodation	-	-	-	-	-	-
H. Office Furniture and Equipment	7	-	-	29	-	36
I. Hydro-meterological Equipment	34	-	-	-	-	34
J. Alternative Livelihoods Equipment	-	-	-	-	-	-
K. Basin Outreach	-	-	-	-	-	-
L. Civil Works	11,726	1,451	-	-	-	13,177
M. Surveys	25	-	-	78	-	104
N. Credit and Revolving Funds	-	-	-	-	-	-
O. Training	-	248	204	-	-	451
P. Administration Costs	-	-	-	-	-	-
Total Investment Costs	13,508	3,647	2,152	405	-	19,711
II. Recurrent Costs						
A. Research Staff	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-
C. International Consultants	-	-	-	-	-	-
D. Regional Consultants	9	15	12	-	-	36
E. Local Staff	69	-	-	36	-	105
F. Transport	391	128	128	26	-	674
G. Office and Equipment	-	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-
J. Basin OUtreach	-	-	-	-	-	-
K. Civil Works	1,876	-	-	-	-	1,876
L. Surveys	198	99	99	-	-	396
M. Credit and Revolving Funds	-	-	-	-	-	-
N. Training	-	233	299	-	-	531
O. Administration	-	-	-	233	-	233
Total Recurrent Costs	2,543	475	538	296	-	3,851
Total PROJECT COSTS	16,050	4,121	2,690	701	-	23,562
Taxes	652	645	645	165	-	2,107
Foreign Exchange	1,899	213	213	138	-	2,462

Table 3-45 T3 Protection and Conservation of Water Sources in Muleba and Birharamulo Districts Disbursement Accounts by Financiers

Tanzania
KAGERA BASIN Integrated Watershed Management Project: T3 Protection and Conservation of Water Sources in Muleba and Biharamulo Districts
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Line Ministries		Non Government Organisations		Local Communities		Parallel Finance		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%			
A. Goods and Services																			
Research /a	43	70.0	-	-	18	30.0	-	-	-	-	-	-	-	-	62	0.3	-	43	18
Consultancy	185	70.0	-	-	79	30.0	-	-	-	-	-	-	-	-	264	1.1	-	185	79
Services by Local Staff	-	-	-	-	3,586	76.9	-	-	1,078	23.1	-	-	-	-	4,664	19.8	-	3,265	1,399
Training Services	451	100.0	-	-	-	-	-	-	-	-	-	-	-	-	451	1.9	11	440	-
Other Services	-	-	71	90.0	8	10.0	-	-	-	-	-	-	-	-	78	0.3	-	78	-
Goods	709	69.9	-	-	306	30.1	-	-	-	-	-	-	-	-	1,015	4.3	721	11	282
Works	-	-	-	-	1,173	7.8	1,451	9.6	-	-	1,876	12.5	10,553	70.1	15,053	63.9	1,173	13,880	-
Subtotal	1,389	6.4	71	0.3	5,170	23.9	1,451	6.7	1,078	5.0	1,876	8.7	10,553	48.9	21,587	91.6	1,905	17,903	1,779
B. Operational Costs																			
Travel and Per Diem	47	90.5	-	-	5	9.5	-	-	-	-	-	-	-	-	52	0.2	12	36	5
Administration	31	5.0	-	-	598	95.0	-	-	-	-	-	-	-	-	629	2.7	83	497	50
Accommodation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Labour	-	-	-	-	105	100.0	-	-	-	-	-	-	-	-	105	0.4	-	73	31
Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	657	100.0	-	-	-	-	-	-	-	-	657	2.8	460	-0	197
Training	487	91.6	-	-	45	8.4	-	-	-	-	-	-	-	-	531	2.3	3	483	45
Outreach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	565	28.6	-	-	1,410	71.4	-	-	-	-	-	-	-	-	1,975	8.4	558	1,090	328
Total PROJECT COSTS	1,954	8.3	71	0.3	6,579	27.9	1,451	6.2	1,078	4.6	1,876	8.0	10,553	44.8	23,562	100.0	2,462	18,993	2,107

Project TW1: Karagwe Lakes Fisheries Project

Table 3-46 TW1 Karagwe Lakes Fisheries Project Cost Summary by Sub-component

Tanzania
KAGERA BASIN Integrated Watershed Management Project: TW1 Ruw akajunju, Ngoma and Rushw a Lakes Fisheries Project
Components Project Cost Summary

	(Tanzanian shilling '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Limnology of Ruw akajunju, Ngoma and Rushw a Lakes	370,610	667,983	1,038,593	249	448	697	64	17
2. Ichthyology of Ruw akajunju, Ngoma and Rushw a Lakes	1,018,994	612,756	1,631,750	683	411	1,094	38	27
3. Fish Breeding and Release for Ruw akajunju, Ngoma and Rushw a Lakes	1,093,813	274,180	1,367,993	734	184	918	20	23
4. Fisheries Organisation and Support for Ruw akajunju, Ngoma and Rushw a Lakes	1,240,109	169,929	1,410,039	832	114	946	12	24
5. Project Management and Administration	380,703	118,192	498,895	255	79	335	24	8
6. NELSAP, NLO and PMB /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	4,104,229	1,843,040	5,947,269	2,753	1,236	3,989	31	100
Physical Contingencies	410,423	184,304	594,727	275	124	399	31	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	4,514,652	2,027,344	6,541,996	3,028	1,360	4,388	31	110

\a Research, NELSAP, NLO and PMB investment and operational costs are included in Component 1 Programme Management and Administration

Table 3-47 TW1 Karagwe Lakes Fisheries Expenditure Accounts by Sub-component

Tanzania

KAGERA BASIN Integrated Watershed Management Project: TW1 Ruwakajunju, Ngoma and Rushwa Lakes Fisheries Project

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Limnology of Ruwakajunju, Ngoma and Rushwa Lakes	Ichthyology of Ruwakajunju, Ngoma and Rushwa Lakes	Fish Breeding and Release for Ruwakajunju, Ngoma and Rushwa Lakes	Fisheries Organisation and Support for Ruwakajunju, Ngoma and Rushwa Lakes	Project Management and Administration	NELSAP, NLO and PMB	Total
I. Investment Costs							
A. Research Staff /a	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-
C. Inernational Consultants	330	330	-	-	-	-	660
D. Regional Consultants	40	132	110	40	-	-	321
E. Local Staff	79	528	348	277	-	-	1,232
F. Transport	45	45	129	83	-	-	300
G. Office and Accommodation	-	-	-	-	-	-	-
H. Office Furniture and Equipment	8	7	21	2	16	-	54
I. Hydro-meterological Equipment	79	17	36	-	-	-	132
J. Alternative Livelihoods Equipment	-	-	-	132	-	-	132
K. Basin Outreach	-	-	-	-	-	-	-
L. Civil Works	-	-	165	132	-	-	297
M. Surveys	17	39	-	-	81	-	136
N. Credit and Revolving Funds	-	-	-	165	-	-	165
O. Training	-	-	-	42	-	-	42
P. Administration Costs	-	-	-	-	-	-	-
Total Investment Costs	596	1,096	809	873	97	-	3,471
II. Recurrent Costs							
A. Research Staff	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-
C. International Consultants	12	12	-	-	-	-	25
D. Regional Consultants	4	15	3	4	-	-	27
E. Local Staff	24	11	110	66	40	-	251
F. Transport	43	43	55	41	-	-	182
G. Office and Equipment	-	-	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-	-
J. Basin OUtreach	-	-	-	-	-	-	-
K. Civil Works	-	-	33	-	-	-	33
L. Surveys	86	26	-	-	-	-	112
M. Credit and Revolving Funds	-	-	-	8	-	-	8
N. Training	-	-	-	45	-	-	45
O. Administration	-	-	-	2	231	-	233
Total Recurrent Costs	170	108	201	167	271	-	916
Total PROJECT COSTS	766	1,204	1,009	1,040	368	-	4,388
Taxes	74	232	227	199	66	-	798
Foreign Exchange	493	452	202	125	87	-	1,360

Table 3-48 TW1 Karagwe Lakes Fisheries Project Disbursement Accounts by Financiers

Tanzania
KAGERA BASIN Integrated Watershed Management Project: TW1 Ruwakajunju, Ngoma and Rushwa Lakes Fisheries Project
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Line Ministries		Microfinance		Parallel Finance		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%			
A. Goods and Services																	
Research /a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Consultancy	885	90.2	-	-	96	9.8	-	-	-	-	-	-	981	22.4	660	225	96
Services by Local Staff	-	-	-	-	1,232	100.0	-	-	-	-	-	-	1,232	28.1	-	862	370
Training Services	42	100.0	-	-	-	-	-	-	-	-	-	-	42	1.0	3	40	-
Credit Services	-	-	-	-	-	-	-	-	165	100.0	-	-	165	3.8	-	165	-
Other Services	-	-	72	90.0	8	10.0	-	-	-	-	-	-	81	1.8	-	81	-
Goods	387	57.5	-	-	194	28.8	92	13.7	-	-	-	-	673	15.3	446	89	138
Works	-	-	-	-	5	1.7	-	-	-	-	292	98.3	297	6.8	37	255	5
Subtotal	1,314	37.9	72	2.1	1,535	44.2	92	2.7	165	4.8	292	8.4	3,471	79.1	1,146	1,716	609
B. Operational Costs																	
Travel and Per Diem	60	80.9	-	-	14	19.1	-	-	-	-	-	-	74	1.7	15	44	14
Administration	17	5.0	-	-	326	95.0	-	-	-	-	-	-	343	7.8	83	211	50
Accommodation	-	-	-	-	2	100.0	-	-	-	-	-	-	2	-	-	2	-
Labour	-	-	-	-	251	100.0	-	-	-	-	-	-	251	5.7	-	176	75
Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	160	100.0	-	-	-	-	-	-	160	3.6	112	-0	48
Credit	-	-	-	-	-	-	-	-	8	100.0	-	-	8	0.2	-	8	-
Training	43	95.1	-	-	2	4.9	-	-	-	-	-	-	45	1.0	1	42	2
Outreach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	8	25.0	25	75.0	-	-	-	-	33	0.8	3	30	-
Subtotal	120	13.1	-	-	764	83.3	25	2.7	8	0.9	-	-	916	20.9	214	513	189
Total PROJECT COSTS	1,434	32.7	72	1.7	2,299	52.4	117	2.7	173	3.9	292	6.7	4,388	100.0	1,360	2,230	798

Project TW2: Robust Evidence Base for Wetlands Management

Table 3-49 TW2 Robust Evidence Base for Wetlands Management Sub-component Cost Summary

Tanzania
KAGERA BASIN Integrated Watershed Management Project: TW2 The Development of Tools for the Integrated Management of Wetlands
Components Project Cost Summary

	(Tanzanian shilling '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Robust Evidence Base to Inform Management Decision Making Mwisi 1	897,097	485,842	1,382,940	602	326	928	35	25
2. Robust Evidence Base to Inform Management Decision Making Mwisi 2	897,097	485,842	1,382,940	602	326	928	35	25
3. Robust Evidence Base to Inform Management Decision Making Misenyi	897,097	485,842	1,382,940	602	326	928	35	25
4. Robust Evidence Base to Inform Management Decision Making Minziro	897,097	485,842	1,382,940	602	326	928	35	25
5. NELSAP NLO and PMB (Wetlands) /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	3,588,390	1,943,369	5,531,759	2,407	1,303	3,710	35	100
Physical Contingencies	358,839	194,337	553,176	241	130	371	35	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	3,947,229	2,137,706	6,084,935	2,647	1,434	4,081	35	110

\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-50 TW2 Robust Evidence Base for Wetlands Management Expenditure Accounts by Sub-component

Tanzania

KAGERA BASIN Integrated Watershed Management Project: TW2 The Development of Tools for the Integrated Management of Wetlands

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Robust Evidence Base to Inform Management Decision Making Mwisi 1	Robust Evidence Base to Inform Management Decision Making Mwisi 2	Robust Evidence Base to Inform Management Decision Making Misenyi	Robust Evidence Base to Inform Management Decision Making Minziro	NELSAP NLO and PMB (Wetlands)	Total
I. Investment Costs						
A. Research Staff /a	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-
C. Inernational Consultants	220	220	220	220	-	880
D. Regional Consultants	475	475	475	475	-	1,901
E. Local Staff	28	28	28	28	-	110
F. Transport	45	45	45	45	-	178
G. Office and Accommodation	-	-	-	-	-	-
H. Office Furniture and Equipment	9	9	9	9	-	38
I. Hydro-meterological Equipment	28	28	28	28	-	112
J. Alternative Livelihoods Equipment	-	-	-	-	-	-
K. Basin Outreach	-	-	-	-	-	-
L. Civil Works	-	-	-	-	-	-
M. Surveys	25	25	25	25	-	101
N. Credit and Revolving Funds	-	-	-	-	-	-
O. Training	-	-	-	-	-	-
P. Administration Costs	-	-	-	-	-	-
Total Investment Costs	830	830	830	830	-	3,320
II. Recurrent Costs						
A. Research Staff	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-
C. International Consultants	7	7	7	7	-	30
D. Regional Consultants	47	47	47	47	-	188
E. Local Staff	37	37	37	37	-	150
F. Transport	69	69	69	69	-	275
G. Office and Equipment	-	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-
J. Basin OUtreach	-	-	-	-	-	-
K. Civil Works	-	-	-	-	-	-
L. Surveys	-	-	-	-	-	-
M. Credit and Revolving Funds	-	-	-	-	-	-
N. Training	-	-	-	-	-	-
O. Administration	30	30	30	30	-	119
Total Recurrent Costs	190	190	190	190	-	761
Total PROJECT COSTS	1,020	1,020	1,020	1,020	-	4,081
Taxes	209	209	209	209	-	834
Foreign Exchange	358	358	358	358	-	1,434

\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administr

Table 3-51 RW2 Robust Evidence Base for Wetlands Management Disbursement Accounts by Financiers

Tanzania
KAGERA BASIN Integrated Watershed Management Project: TW2 The Development of Tools for the Integrated Management of Wetlands
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Exch.	Taxes)	Taxes
A. Goods and Services											
Research /a	1,331	70.0	-	-	570	30.0	1,901	46.6	-	1,331	570
Consultancy	880	100.0	-	-	-	-	880	21.6	880	-	-
Services by Local Staff	-	-	-	-	110	100.0	110	2.7	-	77	33
Training Services	-	-	-	-	-	-	-	-	-	-	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-
Other Services	-	-	-	-	-	-	-	-	-	-	-
Goods	304	70.8	-	-	125	29.2	429	10.5	362	9	59
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	2,515	75.7	-	-	805	24.3	3,320	81.4	1,242	1,416	662
B. Operational Costs											
Travel and Per Diem	303	86.0	-	-	49	14.0	352	8.6	94	209	49
Administration	6	5.0	-	-	113	95.0	119	2.9	-	83	36
Accommodation	-	-	-	-	-	-	-	-	-	-	-
Labour	-	-	-	-	150	100.0	150	3.7	-	105	45
Management	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	140	100.0	140	3.4	98	-	42
Credit	-	-	-	-	-	-	-	-	-	-	-
Training	-	-	-	-	-	-	-	-	-	-	-
Outreach	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	309	40.6	-	-	452	59.4	761	18.6	192	397	172
Total PROJECT COSTS	2,824	69.2	-	-	1,257	30.8	4,081	100.0	1,434	1,813	834

Project TW3: Flood Management in the Bigomba and Biruga Valleys

Table 3-52 TW3 Flood Management in the Bigomba and Biruga Valleys Sub-component Cost Summary

Tanzania
KAGERA BASIN Integrated Watershed Management Project: Project TW3 Flood Management in the Bigomba and Biruga Valleys
Components Project Cost Summary

	(Tanzania shilling '000)			(US$ '000)			% Foreign	% Total Base
	Local	Foreign	Total	Local	Foreign	Total	Exchange	Costs
1. Soil Erosion and Runoff Control	5,271,296	866,852	6,138,149	3,535	581	4,117	14	21
2. Dams and Rain Water Harvesting	3,801,334	710,581	4,511,915	2,550	477	3,026	16	16
3. Wetland Management and Irrigation Development	2,223,484	452,936	2,676,420	1,491	304	1,795	17	9
4. Reafforestation	1,803,171	444,139	2,247,310	1,209	298	1,507	20	8
5. Rural Roads	3,953,506	950,244	4,903,750	2,652	637	3,289	19	17
6. Potable Water Supply	2,128,891	312,931	2,441,822	1,428	210	1,638	13	9
7. Agriculture Extension Storage and Marketing	3,368,050	193,875	3,561,924	2,259	130	2,389	5	12
8. Project Management and Administration	2,009,264	107,173	2,116,437	1,348	72	1,419	5	7
9. NELSAP NLO and PMB /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	24,558,995	4,038,731	28,597,727	16,471	2,709	19,180	14	100
Physical Contingencies	2,455,900	403,873	2,859,773	1,647	271	1,918	14	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	27,014,895	4,442,604	31,457,499	18,119	2,980	21,098	14	110

Table 3-53 TW3 Flood Management in the Bigomba and Biruga Valleys Expenditure Accounts by Sub-component

Tanzania
KAGERA BASIN Integrated Watershed Management Project: Project TW3 Flood Management in the Bigomba and Biruga Valleys
Expenditure Accounts by Components - Totals Including Contingencies
(Tanzania shilling '000)

	Soil Erosion and Runoff Control	Dams and Rain Water Harvesting	Wetland Management and Irrigation Development	Reafforestation	Rural Roads	Potable Water Supply	Agriculture Extension Storage and Marketing	Project Management and Administration	NELSAP NLO and PMB	Total
I. Investment Costs										
A. Research Staff /a	-	-	-	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-	-	-	-
C. Inernational Consultants	-	262,416	-	-	262,416	-	-	-	-	524,832
D. Regional Consultants	354,262	196,812	236,174	39,362	196,812	-	118,087	-	-	1,141,510
E. Local Staff	2,086,207	393,624	669,161	-	393,624	688,842	2,125,570	1,574,496	-	7,931,524
F. Transport	278,817	65,604	265,696	290,298	262,416	131,208	134,488	65,604	-	1,494,131
G. Office and Accommodation	-	-	-	-	-	-	-	-	-	-
H. Office Furniture and Equipment	6,560	5,248	-	20,009	5,248	5,248	4,756	20,337	-	67,408
I. Hydro-meterological Equipment	135,308	14,761	88,155	65,604	65,604	32,802	-	-	-	402,235
J. Alternative Livelihoods Equipment	-	-	-	-	-	-	-	-	-	-
K. Basin Outreach	-	-	-	-	-	-	-	-	-	-
L. Civil Works	2,870,175	3,060,427	1,180,872	1,152,990	2,460,150	1,107,068	287,018	-	-	12,118,699
M. Surveys	-	-	-	-	-	-	-	374,066	-	374,066
N. Credit and Revolving Funds	-	-	-	492,030	-	-	492,030	-	-	984,060
O. Agricultural Inputs	-	-	-	-	-	-	-	-	-	-
P. Training	442,827	-	172,211	131,208	-	131,208	328,020	-	-	1,205,474
Q. Administration Costs	-	-	-	-	-	-	-	-	-	-
Total Investment Costs	6,174,156	3,998,892	2,612,269	2,191,502	3,646,270	2,096,376	3,489,969	2,034,503	-	26,243,937
II. Recurrent Costs										
A. Research Staff	-	-	-	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-	-	-	-
C. International Consultants	-	9,841	-	-	9,841	-	-	-	-	19,681
D. Regional Consultants	39,854	22,141	26,570	6,642	22,141	-	6,642	-	-	123,992
E. Local Staff	164,010	98,406	-	-	98,406	151,722	-	37,722	-	550,266
F. Transport	250,935	169,914	151,545	126,288	264,384	118,087	126,288	59,044	-	1,266,485
G. Office and Equipment	-	-	-	-	-	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-	-	-	-	-
J. Basin OUtreach	-	-	-	-	-	-	-	-	-	-
K. Civil Works	123,008	294,890	12,301	-	984,060	221,414	-	-	-	1,635,672
L. Surveys	-	369,023	1,968	-	369,023	-	-	-	-	740,013
M. Credit and Revolving Funds	-	-	-	49,203	-	-	49,203	-	-	98,406
N. Agricultural Inputs	-	-	-	-	-	-	-	-	-	-
O. Training	-	-	139,409	98,406	-	98,406	246,015	-	-	582,236
P. Administration	-	-	-	-	-	-	-	196,812	-	196,812
Total Recurrent Costs	577,807	964,215	331,792	280,539	1,747,855	589,628	428,148	293,578	-	5,213,562
Total PROJECT COSTS	6,751,964	4,963,107	2,944,062	2,472,041	5,394,125	2,686,004	3,918,117	2,328,081	-	31,457,499
Taxes	938,564	281,441	417,028	153,546	368,826	342,899	789,003	586,205	-	3,877,512
Foreign Exchange	953,538	781,639	498,230	488,553	1,045,269	344,224	213,262	117,890	-	4,442,604

Table 3-54 TW3 Flood Management in the Bigomba and Biruga Valleys Disbursement Accounts by Financiers

Tanzania
KAGERA BASIN Integrated Watershed Management Project: Project TW3 Flood Management in the Bigomba and Biruga Valleys
Disbursement Accounts by Financiers
(US$ '000)

	NBTF		NELSAP		Central Government		Non Government Organisations		Local Communities		Microfinance		Parallel Financing		Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Exch.	Taxes)	Taxes
A. Goods and Services																			
Research /a	536	70.0	-	-	230	30.0	-	-	-	-	-	-	-	-	766	3.6	-	536	230
Consultancy	352	100.0	-	-	-	-	-	-	-	-	-	-	-	-	352	1.7	352	-	-
Services by Local Staff	-	-	-	-	5,320	100.0	-	-	-	-	-	-	-	-	5,320	25.2	-	3,724	1,596
Training Services	-	-	-	-	404	50.0	404	50.0	-	-	-	-	-	-	809	3.8	-	809	-
Credit Services	-	-	-	-	-	-	-	-	-	-	660	100.0	-	-	660	3.1	-	660	-
Other Services	-	-	226	90.0	25	10.0	-	-	-	-	-	-	-	-	251	1.2	-	251	-
Goods	916	69.5	-	-	401	30.5	-	-	-	-	-	-	-	-	1,317	6.2	994	16	307
Works	-	-	-	-	193	2.1	-	-	412	4.5	-	-	8,620	93.4	9,225	43.7	1,023	8,202	-
Subtotal	1,804	9.6	226	1.2	6,572	35.1	404	2.2	412	2.2	660	3.5	8,620	46.1	18,699	88.6	2,369	14,197	2,133
B. Operational Costs																			
Travel and Per Diem	138	85.4	-	-	24	14.6	-	-	-	-	-	-	-	-	162	0.8	46	92	24
Administration	31	5.0	-	-	597	95.0	-	-	-	-	-	-	-	-	628	3.0	17	572	40
Accommodation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Labour	-	-	-	-	369	100.0	-	-	-	-	-	-	-	-	369	1.7	-	258	111
Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	784	100.0	-	-	-	-	-	-	-	-	784	3.7	549	-	235
Credit	-	-	-	-	-	-	-	-	-	-	66	100.0	-	-	66	0.3	-	66	-
Training	332	85.0	-	-	59	15.0	-	-	-	-	-	-	-	-	391	1.9	-	332	59
Outreach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	501	20.9	-	-	1,832	76.4	-	-	-	-	66	2.8	-	-	2,400	11.4	611	1,321	468
Total PROJECT COSTS	2,305	10.9	226	1.1	8,404	39.8	404	1.9	412	2.0	726	3.4	8,620	40.9	21,098	100.0	2,980	15,518	2,601

3.2.4 Uganda KIWMP

Project U1: Land Rehabilitation in Isingiro District

Table 3-55 U1 Land Rehabilitation in Isingiro District Cost Summary by Sub-component

Uganda
KAGERA BASIN Integrated Watershed Management Project: U1 Land Rehabilitation in Isingiro District
Components Project Cost Summary

	(Ugandan shilling '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Soil Conservation and Land Rehabiltation	17,538,727	3,035,913	20,574,641	7,197	1,246	8,443	15	92
2. Alternative Livelihoods	791,708	144,587	936,295	325	59	384	15	4
3. Project Managent and Administration	732,972	193,181	926,153	301	79	380	21	4
4. NELSAP , NLO and PMB /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	19,063,407	3,373,682	22,437,089	7,822	1,384	9,207	15	100
Physical Contingencies	1,906,341	337,368	2,243,709	782	138	921	15	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	20,969,748	3,711,050	24,680,797	8,605	1,523	10,128	15	110

\a NELSAP, NLO and PMB investment and operational costs are included in Component 1, Project Management and Administration

Table 3-56 U1 Land Rehabilitation in Isingiro District Expenditure Accounts by Sub-component

Uganda
KAGERA BASIN Integrated Watershed Management Project: U1 Land Rehabilitation in Isingiro District
Expenditure Accounts by Components - Totals Including Contingencies
(US$ '000)

	Soil Conservation and Land Rehabiltation	Alternative Livelihoods	Project Managent and Administration	NELSAP , NLO and PMB	Total
I. Investment Costs					
A. Research Staff /a	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-
C. Inernational Consultants	-	-	-	-	-
D. Regional Consultants	-	18	-	-	18
E. Local Staff	634	66	-	-	700
F. Transport	133	45	-	-	178
G. Office and Accommodation	-	-	-	-	-
H. Office Furniture and Equipment	8	2	16	-	26
I. Hydro-meterological Equipment	65	-	-	-	65
J. Alternative Livelihoods Equipment	-	65	-	-	65
K. Basin Outreach	-	-	-	-	-
L. Civil Works	6,932	-	-	-	6,932
M. Surveys	17	-	62	-	78
N. Credit and Revolving Funds	-	110	-	-	110
O. Training	59	33	-	-	92
P. Administration Costs	-	-	-	-	-
Total Investment Costs	7,847	338	78	-	8,264
II. Recurrent Costs					
A. Research Staff	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-
C. International Consultants	-	-	-	-	-
D. Regional Consultants	-	2	-	-	2
E. Local Staff	56	6	43	-	104
F. Transport	607	36	-	-	643
G. Office and Equipment	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-
J. Basin OUtreach	-	-	-	-	-
K. Civil Works	715	-	-	-	715
L. Surveys	-	-	-	-	-
M. Credit and Revolving Funds	-	6	-	-	6
N. Training	59	33	-	-	92
O. Administration	2	2	297	-	301
Total Recurrent Costs	1,439	84	340	-	1,864
Total PROJECT COSTS	9,287	423	418	-	10,128
Taxes	434	73	86	-	594
Foreign Exchange	1,370	65	87	-	1,523

Table 3-57 U1 Land Rehabilitation in Isingoro District Disbursement Accounts by Financier

Uganda
KAGERA BASIN Integrated Watershed Management Project: U1 Land Rehabilitation in Isingiro District
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Line Ministries		Non Government Organisations		Local Communities		Microfinance		Parallel Finance		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%			
A. Goods and Services																					
Research /a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Consultancy	12	70.0	-	-	5	30.0	-	-	-	-	-	-	-	-	-	-	18	0.2	-	12	5
Services by Local Staff	-	-	-	-	700	100.0	-	-	-	-	-	-	-	-	-	-	700	6.9	-	490	210
Training Services	59	64.3	-	-	-	-	-	-	33	35.7	-	-	-	-	-	-	92	0.9	-	92	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-	-	110	100.0	-	-	110	1.1	-	110	-
Other Services	-	-	56	90.0	6	10.0	-	-	-	-	-	-	-	-	-	-	62	0.6	-	62	-
Goods	203	57.8	-	-	102	29.2	45	13.0	-	-	-	-	-	-	-	-	350	3.5	225	46	79
Works	-	-	-	-	693	10.0	-	-	-	-	-	-	-	-	6,239	90.0	6,932	68.4	693	6,239	-
Subtotal	274	3.3	56	0.7	1,507	18.2	45	0.5	33	0.4	-	-	110	1.3	6,239	75.5	8,264	81.6	919	7,052	294
B. Operational Costs																					
Travel and Per Diem	3	89.3	-	-	0	10.7	-	-	-	-	-	-	-	-	-	-	3	-	1	2	0
Administration	15	5.0	-	-	284	95.0	-	-	-	-	-	-	-	-	-	-	299	3.0	83	147	69
Accommodation	-	-	-	-	2	100.0	-	-	-	-	-	-	-	-	-	-	2	-	-	2	-
Labour	-	-	-	-	104	100.0	-	-	-	-	-	-	-	-	-	-	104	1.0	-	73	31
Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	642	100.0	-	-	-	-	-	-	-	-	-	-	642	6.3	450	-0	193
Credit	-	-	-	-	-	-	-	-	-	-	-	-	6	100.0	-	-	6	0.1	-	6	-
Training	55	59.5	-	-	7	7.5	-	-	31	33.0	-	-	-	-	-	-	92	0.9	-	85	7
Outreach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	36	5.0	-	-	-	-	679	95.0	-	-	-	-	715	7.1	71	643	-
Subtotal	73	3.9	-	-	1,076	57.7	-	-	31	1.6	679	36.4	6	0.3	-	-	1,864	18.4	604	959	300
Total PROJECT COSTS	347	3.4	56	0.5	2,582	25.5	45	0.4	64	0.6	679	6.7	116	1.1	6,239	61.6	10,128	100.0	1,523	8,010	594

Project U2: IWRM Project in Rakai District

Table 3-58 IWRM Project in Rakai District Cost Summary by Sub-component

Uganda
KAGERA BASIN Integrated Watershed Management Project: U2 IWRM project Rakai District
Components Project Cost Summary

	(Ugandan shilling '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Wetland Management Evidence Base	657,015	506,287	1,163,302	270	208	477	44	3
2. IWRM Action Plans and Regulation	700,296	1,005,604	1,705,900	287	413	700	59	5
3. Soil Conservation and Land Rehabiltation	23,198,400	3,572,837	26,771,237	9,519	1,466	10,985	13	76
4. Rural Roads and Rural Water Supply	2,609,308	1,085,245	3,694,553	1,071	445	1,516	29	10
5. Alternative Livelihoods in Wetlands	791,708	144,587	936,295	325	59	384	15	3
6. Project Managment and Administration	767,986	193,181	961,167	315	79	394	20	3
7. NELSAP NLO and PMB /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	28,724,714	6,507,740	35,232,455	11,787	2,670	14,457	18	100
Physical Contingencies	2,872,471	650,774	3,523,245	1,179	267	1,446	18	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	31,597,186	7,158,514	38,755,700	12,966	2,937	15,903	18	110

\a NELSAP, NLO and PMB investment and operational costs are included in Component 1 Project Management and Administration

Table 3-59 U2 IWRM Project in Rakai District Expenditure Accounts by Sub-component

Uganda
KAGERA BASIN Integrated Watershed Management Project: U2 IWRM project Rakai District
Expenditure Accounts by Components - Totals Including Contingencies
(US$ '000)

	Wetland Management Evidence Base	IWRM Action Plans and Regulation	Soil Conservation and Land Rehabiltation	Rural Roads and Rural Water Supply	Alternative Livelihoods in Wetlands	Project Managment and Administration	NELSAP NLO and PMB	Total
I. Investment Costs								
A. Research Staff /a	-	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-	-
C. Inernational Consultants	88	330	-	-	-	-	-	418
D. Regional Consultants	79	66	-	-	18	-	-	163
E. Local Staff	158	158	2,033	-	66	-	-	2,416
F. Transport	45	83	264	-	45	-	-	436
G. Office and Accommodation	-	-	-	-	-	-	-	-
H. Office Furniture and Equipment	7	2	17	-	2	16	-	44
I. Hydro-meterological Equipment	55	-	106	-	-	-	-	160
J. Alternative Livelihoods Equipment	-	-	-	-	65	-	-	65
K. Basin Outreach	-	-	-	-	-	-	-	-
L. Civil Works	-	-	8,524	-	-	-	-	8,524
M. Surveys	1	-	33	-	-	78	-	112
N. Credit and Revolving Funds	-	-	-	-	110	-	-	110
O. Training	-	20	119	-	33	-	-	172
P. Administration Costs	-	-	-	-	-	-	-	-
Total Investment Costs	433	659	11,096	-	338	94	-	12,620
II. Recurrent Costs								
A. Research Staff	-	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-	-
C. International Consultants	3	12	-	-	-	-	-	16
D. Regional Consultants	9	7	-	-	2	-	-	18
E. Local Staff	1	-	56	56	6	43	-	161
F. Transport	69	69	563	563	36	-	-	1,300
G. Office and Equipment	-	-	-	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-	-	-
J. Basin OUtreach	-	-	-	-	-	-	-	-
K. Civil Works	-	-	278	958	-	-	-	1,236
L. Surveys	11	-	-	-	-	-	-	11
M. Credit and Revolving Funds	-	-	-	-	6	-	-	6
N. Training	-	21	59	59	33	-	-	173
O. Administration	-	1	32	32	2	297	-	364
Total Recurrent Costs	92	111	988	1,668	84	340	-	3,283
Total PROJECT COSTS	525	770	12,084	1,668	423	434	-	15,903
Taxes	107	120	891	199	73	86	-	1,476
Foreign Exchange	229	454	1,613	490	65	87	-	2,937

Table 3-60 U2 IWRM Project in Rakai District Disbursement Accounts by Financiers

Uganda
KAGERA BASIN Integrated Watershed Management Project: U2 IWRM project Rakai District
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Line Ministries		Non Government Organisations		Local Communities		Microfinance		Parallel Finance		Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Exch.	Taxes)	Taxes
A. Goods and Services																					
Research /a	55	70.0	-	-	24	30.0	-	-	-	-	-	-	-	-	-	-	79	0.5	-	55	24
Consultancy	477	95.0	-	-	25	5.0	-	-	-	-	-	-	-	-	-	-	502	3.2	418	59	25
Services by Local Staff	-	-	-	-	2,416	100.0	-	-	-	-	-	-	-	-	-	-	2,416	15.2	-	1,691	725
Training Services	139	80.8	-	-	-	-	-	-	33	19.2	-	-	-	-	-	-	172	1.1	17	155	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-	-	110	100.0	-	-	110	0.7	-	110	-
Other Services	-	-	70	90.0	8	10.0	-	-	-	-	-	-	-	-	-	-	78	0.5	-	78	-
Goods	482	65.1	-	-	213	28.8	45	6.1	-	-	-	-	-	-	-	-	740	4.7	535	46	159
Works	-	-	-	-	212	2.5	-	-	-	-	-	-	-	-	8,312	97.5	8,524	53.6	852	7,672	-
Subtotal	1,152	9.1	70	0.6	2,897	23.0	45	0.4	33	0.3	-	-	110	0.9	8,312	65.9	12,620	79.4	1,822	9,866	933
B. Operational Costs																					
Travel and Per Diem	59	77.2	-	-	17	22.8	-	-	-	-	-	-	-	-	-	-	76	0.5	30	29	17
Administration	15	5.0	-	-	294	95.0	-	-	-	-	-	-	-	-	-	-	310	1.9	83	158	69
Accommodation	-	-	-	-	65	100.0	-	-	-	-	-	-	-	-	-	-	65	0.4	-	47	18
Labour	-	-	-	-	161	100.0	-	-	-	-	-	-	-	-	-	-	161	1.0	-	112	48
Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	1,257	100.0	-	-	-	-	-	-	-	-	-	-	1,257	7.9	880	-0	377
Credit	-	-	-	-	-	-	-	-	-	-	-	-	6	100.0	-	-	6	-	-	6	-
Training	129	74.4	-	-	14	8.0	-	-	31	17.6	-	-	-	-	-	-	173	1.1	-	159	14
Outreach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	18	1.4	886	71.7	-	-	333	26.9	-	-	-	-	1,236	7.8	124	1,112	-
Subtotal	203	6.2	-	-	1,826	55.6	886	27.0	31	0.9	333	10.1	6	0.2	-	-	3,283	20.6	1,116	1,624	544
Total PROJECT COSTS	1,356	8.5	70	0.4	4,723	29.7	931	5.9	64	0.4	333	2.1	116	0.7	8,312	52.3	15,903	100.0	2,937	11,489	1,476

Project U3: IWRM Project in Maziba River Catchment

Table 3-61 U3 IWRM Project in Maziba River Catchment Cost Summary by Sub-component

Uganda
KAGERA BASIN Integrated Watershed Management Project: U3 IWRM project Maziba River Catchment
Components Project Cost Summary

	(Ugandan shilling '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Wetland Management Evidence Base	557,586	506,287	1,063,872	229	208	437	48	3
2. Payment for Ecosystems Services	556,197	395,696	951,892	228	162	391	42	3
3. IWRM Action Plans and Regulation	700,296	1,005,604	1,705,900	287	413	700	59	5
4. Soil Conservation and Land Rehabiltation	27,703,745	4,059,784	31,763,529	11,368	1,666	13,034	13	85
5. Alternative Livelihoods in Wetlands	791,708	144,587	936,295	325	59	384	15	3
6. Project Managent and Administration	720,116	193,181	913,297	295	79	375	21	2
7. NELSAP, NLO and PMB /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	31,029,648	6,305,138	37,334,786	12,733	2,587	15,320	17	100
Physical Contingencies	3,102,965	630,514	3,733,479	1,273	259	1,532	17	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	34,132,613	6,935,652	41,068,265	14,006	2,846	16,852	17	110

\a NELSAP, NLO and PMB investment and operational costs are included in Component 1 Programme Management and Administration

Table 3-62 U3 IWRM Project in Maziba River Catchment Expenditure Accounts by Sub-component

Uganda
KAGERA BASIN Integrated Watershed Management Project: U3 IWRM project Maziba River Catchment
Expenditure Accounts by Components - Totals Including Contingencies
(US$ '000)

	Wetland Management Evidence Base	Payment for Ecosystems Services	IWRM Action Plans and Regulation	Soil Conservation and Land Rehabiltation	Alternative Livelihoods in Wetlands	Project Managent and Administration	NELSAP, NLO and PMB	Total
I. Investment Costs								
A. Research Staff /a	-	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-	-
C. Inernational Consultants	88	66	330	-	-	-	-	484
D. Regional Consultants	40	79	66	-	18	-	-	202
E. Local Staff	158	61	158	713	66	-	-	1,156
F. Transport	45	44	83	132	45	-	-	348
G. Office and Accommodation	-	-	-	-	-	-	-	-
H. Office Furniture and Equipment	7	2	2	8	2	16	-	36
I. Hydro-meterological Equipment	55	35	-	59	-	-	-	149
J. Alternative Livelihoods Equipment	-	-	-	-	65	-	-	65
K. Basin Outreach	-	-	-	-	-	-	-	-
L. Civil Works	-	-	-	11,112	-	-	-	11,112
M. Surveys	1	17	-	17	-	56	-	90
N. Credit and Revolving Funds	-	-	-	-	110	-	-	110
O. Training	-	-	20	59	33	-	-	112
P. Administration Costs	-	-	-	-	-	-	-	-
Total Investment Costs	393	303	659	12,100	338	72	-	13,865
II. Recurrent Costs								
A. Research Staff	-	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-	-
C. International Consultants	3	4	12	-	-	-	-	20
D. Regional Consultants	4	9	7	-	2	-	-	23
E. Local Staff	1	24	-	56	6	43	-	129
F. Transport	69	41	69	563	36	-	-	778
G. Office and Equipment	-	-	-	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-	-	-
J. Basin OUtreach	-	11	-	-	-	-	-	11
K. Civil Works	-	-	-	1,528	-	-	-	1,528
L. Surveys	10	-	-	-	-	-	-	10
M. Credit and Revolving Funds	-	-	-	-	6	-	-	6
N. Training	-	5	21	59	33	-	-	119
O. Administration	-	32	1	32	2	297	-	364
Total Recurrent Costs	87	127	111	2,237	84	340	-	2,987
Total PROJECT COSTS	480	430	770	14,337	423	412	-	16,852
Taxes	96	85	120	454	73	86	-	914
Foreign Exchange	229	179	454	1,832	65	87	-	2,846

Table 3-63 U3 IWRM Project in Maziba River Catchment Disbursement Accounts by Financier

Uganda
KAGERA BASIN Integrated Watershed Management Project: U3 IWRM project Maziba River Catchment
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Line Ministries		Non Government Organisations		Local Communities		Microfinance		Parallel Finance		Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Exch.	Taxes)	Taxes
A. Goods and Services																					
Research /a	28	70.0	-	-	12	30.0	-	-	-	-	-	-	-	-	-	-	40	0.2	-	28	12
Consultancy	598	92.4	-	-	49	7.6	-	-	-	-	-	-	-	-	-	-	647	3.8	484	114	49
Services by Local Staff	-	-	-	-	1,156	100.0	-	-	-	-	-	-	-	-	-	-	1,156	6.9	-	809	347
Training Services	79	70.6	-	-	-	-	-	-	33	29.4	-	-	-	-	-	-	112	0.7	17	96	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-	-	110	100.0	-	-	110	0.7	-	110	-
Other Services	-	-	50	90.0	6	10.0	-	-	-	-	-	-	-	-	-	-	56	0.3	-	56	-
Goods	406	64.1	-	-	181	28.7	45	7.2	-	-	-	-	-	-	-	-	633	3.8	454	46	132
Works	-	-	-	-	1,111	10.0	-	-	-	-	-	-	-	-	10,001	90.0	11,112	65.9	1,111	10,001	-
Subtotal	1,111	8.0	50	0.4	2,515	18.1	45	0.3	33	0.2	-	-	110	0.8	10,001	72.1	13,865	82.3	2,066	11,260	539
B. Operational Costs																					
Travel and Per Diem	71	77.5	-	-	21	22.5	-	-	-	-	-	-	-	-	-	-	91	0.5	34	37	21
Administration	15	5.0	-	-	293	95.0	-	-	-	-	-	-	-	-	-	-	309	1.8	83	157	69
Accommodation	-	-	-	-	65	100.0	-	-	-	-	-	-	-	-	-	-	65	0.4	-	47	18
Labour	-	-	-	-	129	100.0	-	-	-	-	-	-	-	-	-	-	129	0.8	-	91	39
Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	729	100.0	-	-	-	-	-	-	-	-	-	-	729	4.3	511	-0	219
Credit	-	-	-	-	-	-	-	-	-	-	-	-	6	100.0	-	-	6	-	-	6	-
Training	79	66.4	-	-	9	7.9	-	-	31	25.7	-	-	-	-	-	-	119	0.7	-	109	9
Outreach	-	-	10	90.0	1	10.0	-	-	-	-	-	-	-	-	-	-	11	0.1	-	11	-
Works	-	-	-	-	76	5.0	-	-	-	-	1,451	95.0	-	-	-	-	1,528	9.1	153	1,375	-
Subtotal	165	5.5	10	0.3	1,324	44.3	-	-	31	1.0	1,451	48.6	6	0.2	-	-	2,987	17.7	780	1,832	375
Total PROJECT COSTS	1,276	7.6	60	0.4	3,839	22.8	45	0.3	64	0.4	1,451	8.6	116	0.7	10,001	59.3	16,852	100.0	2,846	13,092	914

Project UW1 Robust Evidence Base for Wetland Management

Table 3-64 UW1 Robust Evidence Base for Wetland Management Cost Summary by Sub-component

Uganda
KAGERA BASIN Integrated Watershed Management Project: UW1 The Development of Tools for the Integrated Management of Wetlands
Components Project Cost Summary

	(Ugandan shilling '000)			(US$ '000)			% Foreign	% Total Base
	Local	Foreign	Total	Local	Foreign	Total	Exchange	Costs
1. Robust Evidence Base to Inform Management Decision Making	1,466,282	794,096	2,260,378	602	326	928	35	100
2. NELSAP NLO and PMB (Wetlands) /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	1,466,282	794,096	2,260,378	602	326	928	35	100
Physical Contingencies	146,628	79,410	226,038	60	33	93	35	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	1,612,910	873,506	2,486,416	662	358	1,020	35	110

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\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-65 UW21 Robust Evidence Base for Wetland Management Expenditure Accounts by Sub-components

Uganda

KAGERA BASIN Integrated Watershed Management Project: UW1 The Development of Tools for the Integrated Management of Wetlands

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Robust Evidence Base to Inform Management Decision Making	NELSAP NLO and PMB (Wetlands)	Total
I. Investment Costs			
A. Research Staff /a	-	-	-
B. Tuition Fees	-	-	-
C. Inernational Consultants	220	-	220
D. Regional Consultants	475	-	475
E. Local Staff	28	-	28
F. Transport	45	-	45
G. Office and Accommodation	-	-	-
H. Office Furniture and Equipment	9	-	9
I. Hydro-meterological Equipment	28	-	28
J. Alternative Livelihoods Equipment	-	-	-
K. Basin Outreach	-	-	-
L. Civil Works	-	-	-
M. Surveys	25	-	25
N. Credit and Revolving Funds	-	-	-
O. Training	-	-	-
P. Administration Costs	-	-	-
Total Investment Costs	830	-	830
II. Recurrent Costs			
A. Research Staff	-	-	-
B. Tuition Fees	-	-	-
C. International Consultants	7	-	7
D. Regional Consultants	47	-	47
E. Local Staff	37	-	37
F. Transport	69	-	69
G. Office and Equipment	-	-	-
H. Hrdro-metereological Equipment	-	-	-
I. Alternative Livelihoods Equipment	-	-	-
J. Basin OUtreach	-	-	-
K. Civil Works	-	-	-
L. Surveys	-	-	-
M. Credit and Revolving Funds	-	-	-
N. Training	-	-	-
O. Administration	30	-	30
Total Recurrent Costs	190	-	190
Total PROJECT COSTS	1,020	-	1,020
Taxes	209	-	209
Foreign Exchange	358	-	358

\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administratio

Table 3-66 UW1 Robust Evidence Base for Wetland Management Disbursement Accounts by Financier

Uganda
KAGERA BASIN Integrated Watershed Management Project: UW1 The Development of Tools for the Integrated Management of Wetlands
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%			
A. Goods and Services											
Research /a	333	70.0	-	-	143	30.0	475	46.6	-	333	143
Consultancy	220	100.0	-	-	-	-	220	21.6	220	-	-
Services by Local Staff	-	-	-	-	28	100.0	28	2.7	-	19	8
Training Services	-	-	-	-	-	-	-	-	-	-	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-
Other Services	-	-	-	-	-	-	-	-	-	-	-
Goods	76	70.8	-	-	31	29.2	107	10.5	90	2	15
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	629	75.7	-	-	201	24.3	830	81.4	310	354	166
B. Operational Costs											
Travel and Per Diem	76	86.0	-	-	12	14.0	88	8.6	24	52	12
Administration	1	5.0	-	-	28	95.0	30	2.9	-	21	9
Accommodation	-	-	-	-	-	-	-	-	-	-	-
Labour	-	-	-	-	37	100.0	37	3.7	-	26	11
Management	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	35	100.0	35	3.4	24	-0	10
Credit	-	-	-	-	-	-	-	-	-	-	-
Training	-	-	-	-	-	-	-	-	-	-	-
Outreach	-	-	-	-	-	-	-	-	-	-	-
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	77	40.6	-	-	113	59.4	190	18.6	48	99	43
Total PROJECT COSTS	706	69.2	-	-	314	30.8	1,020	100.0	358	453	209

Project UW2 Payment for Wetland Ecosystems Services

Table 3-67 UW2 Payment for Wetland Ecosystems Services Cost Summary by Sub-component

Uganda
KAGERA BASIN Integrated Watershed Management Project: UW2 The Development of Tools for the Integrated Management of Wetlands
Components Project Cost Summary

	(Ugandan shilling '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Payment for Wetland Ecosystems Services	1,224,356	529,511	1,753,867	502	217	720	30	100
2. NELSAP NLO and PMB (Wetlands) /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	1,224,356	529,511	1,753,867	502	217	720	30	100
Physical Contingencies	122,436	52,951	175,387	50	22	72	30	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	1,346,792	582,462	1,929,254	553	239	792	30	110

\a Research, NELSAP, NLO and PMB investment and operational costs are included in IWMP Component 1, Programme Management and Administration

Table 3-68 UW2 Payment for Wetland Ecosystems Services Expenditure Accounts by Sub-component

Uganda

KAGERA BASIN Integrated Watershed Management Project: UW2 The Development of Tools for the Integrated Management of Wetlands

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Payment for Wetland Ecosystems Services	NELSAP NLO and PMB (Wetlands)	Total
I. Investment Costs			
A. Research Staff /a	-	-	-
B. Tuition Fees	-	-	-
C. Inernational Consultants	110	-	110
D. Regional Consultants	216	-	216
E. Local Staff	61	-	61
F. Transport	44	-	44
G. Office and Accommodation	-	-	-
H. Office Furniture and Equipment	4	-	4
I. Hydro-meterological Equipment	35	-	35
J. Alternative Livelihoods Equipment	-	-	-
K. Basin Outreach	-	-	-
L. Civil Works	-	-	-
M. Surveys	23	-	23
N. Credit and Revolving Funds	-	-	-
O. Training	-	-	-
P. Administration Costs	123	-	123
Total Investment Costs	615	-	615
II. Recurrent Costs			
A. Research Staff	-	-	-
B. Tuition Fees	-	-	-
C. International Consultants	4	-	4
D. Regional Consultants	35	-	35
E. Local Staff	24	-	24
F. Transport	65	-	65
G. Office and Equipment	-	-	-
H. Hrdro-metereological Equipment	-	-	-
I. Alternative Livelihoods Equipment	-	-	-
J. Basin OUtreach	11	-	11
K. Civil Works	-	-	-
L. Surveys	-	-	-
M. Credit and Revolving Funds	-	-	-
N. Training	5	-	5
O. Administration	32	-	32
Total Recurrent Costs	176	-	176
Total PROJECT COSTS	792	-	792
Taxes	171	-	171

Table 3-69 UW2 Payment for Wetland Ecosystems Services Disbursement Account by Financier

Uganda
KAGERA BASIN Integrated Watershed Management Project: UW2 The Development of Tools for the Integrated Management of Wetlands
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%			
A. Goods and Services											
Research /a	-	-	-	-	-	-	-	-	-	-	-
Consultancy	261	80.1	-	-	65	19.9	326	41.1	110	151	65
Services by Local Staff	-	-	-	-	61	100.0	61	7.6	-	42	18
Training Services	-	-	-	-	-	-	-	-	-	-	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-
Other Services	-	-	92	71.0	38	29.0	130	16.4	-	93	37
Goods	72	72.7	-	-	27	27.3	100	12.6	84	2	14
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	333	54.2	92	15.0	190	30.9	615	77.7	194	288	134
B. Operational Costs											
Travel and Per Diem	59	85.3	-	-	10	14.7	69	8.7	21	38	10
Administration	-	-	-	-	-	-	-	-	-	-	-
Accommodation	-	-	-	-	32	100.0	32	4.0	-	23	9
Labour	-	-	-	-	24	100.0	24	3.1	-	17	7
Management	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	35	100.0	35	4.4	24	-0	10
Credit	-	-	-	-	-	-	-	-	-	-	-
Training	5	100.0	-	-	-	-	5	0.6	-	5	-
Outreach	-	-	10	90.0	1	10.0	11	1.4	-	11	-
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	64	36.2	10	5.6	102	58.2	176	22.3	45	94	37
Total PROJECT COSTS	397	50.2	102	12.9	292	36.9	792	100.0	239	382	171

Project UW3: Alternative Livelihoods in Wetlands

Table 3-70 UW3 Alternative Livelihoods in Wetlands Cost Summary by Sub-component

Uganda
KAGERA BASIN Integrated Watershed Management Project: UW 3 Soil Conservation and Rehabilitation, Sustainable Wetlands Management and Alternative Livelihoods
Components Project Cost Summary

	(Ugandan shilling '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Soil Conservation and Fertility Enhancement	19,021,260	2,438,048	21,459,308	7,805	1,000	8,806	11	70
2. Wetlands Drainage and Management	5,837,773	973,216	6,810,989	2,395	399	2,795	14	22
3. Alternative Livelihoods in Wetlands	1,784,596	753,155	2,537,750	732	309	1,041	30	8
4. NELSAP NLO and PMB (Wetlands) /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	26,643,628	4,164,419	30,808,047	10,933	1,709	12,642	14	100
Physical Contingencies	2,664,363	416,442	3,080,805	1,093	171	1,264	14	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	29,307,991	4,580,861	33,888,852	12,026	1,880	13,906	14	110

Table 3-71 UW3 Alternative Livelihoods in Wetlands Expenditure Accounts by Sub-component

Uganda

KAGERA BASIN Integrated Watershed Management Project: UW 3 Soil Conservation and Rehabilitation, Sustainable Wetlands Management and Alternative Livelihood

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Soil Conservation and Fertility Enhancement	Wetlands Drainage and Management	Alternative Livelihoods in Wetlands	NELSAP NLO and PMB (Wetlands)	Total
I. Investment Costs					
A. Research Staff /a	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-
C. Inernational Consultants	-	-	198	-	198
D. Regional Consultants	-	-	216	-	216
E. Local Staff	634	634	66	-	1,333
F. Transport	165	165	45	-	375
G. Office and Accommodation	-	-	-	-	-
H. Office Furniture and Equipment	8	8	4	-	20
I. Hydro-meterological Equipment	59	59	35	-	153
J. Alternative Livelihoods Equipment	-	-	65	-	65
K. Basin Outreach	-	-	-	-	-
L. Civil Works	6,413	1,650	-	-	8,063
M. Surveys	17	17	31	-	64
N. Credit and Revolving Funds	-	-	110	-	110
O. Training	59	59	33	-	152
P. Administration Costs	-	-	128	-	128
Total Investment Costs	7,354	2,591	930	-	10,876
II. Recurrent Costs					
A. Research Staff	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-
C. International Consultants	-	-	7	-	7
D. Regional Consultants	-	-	39	-	39
E. Local Staff	56	56	19	-	130
F. Transport	72	72	69	-	213
G. Office and Equipment	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-
J. Basin OUtreach	-	-	11	-	11
K. Civil Works	2,113	264	-	-	2,377
L. Surveys	-	-	-	-	-
M. Credit and Revolving Funds	-	-	6	-	6
N. Training	59	59	33	-	152
O. Administration	32	32	32	-	96
Total Recurrent Costs	2,332	483	215	-	3,030
Total PROJECT COSTS	9,686	3,074	1,145	-	13,906
Taxes	293	293	196	-	781

Table 3-72 UW3 Alternative Livelihoods in Wetlands Disbursement Accounts by Financier

Uganda
KAGERA BASIN Integrated Watershed Management Project: UW 3 Soil Conservation and Rehabilitation, Sustainable Wetlands Management and Alternative Livelihoods
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government		Line Ministries		Non Government Organisations		Local Communities		Microfinance		Parallel Finance		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%			
A. Goods and Services																					
Research /a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Consultancy	349	84.4	-	-	65	15.6	-	-	-	-	-	-	-	-	-	-	414	3.0	198	151	65
Services by Local Staff	-	-	-	-	1,333	100.0	-	-	-	-	-	-	-	-	-	-	1,333	9.6	-	933	400
Training Services	119	78.3	-	-	-	-	-	-	33	21.7	-	-	-	-	-	-	152	1.1	-	152	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-	-	110	100.0	-	-	110	0.8	-	110	-
Other Services	-	-	100	71.7	39	28.3	-	-	-	-	-	-	-	-	-	-	140	1.0	-	101	38
Goods	430	64.7	-	-	189	28.5	45	6.8	-	-	-	-	-	-	-	-	665	4.8	489	40	135
Works	-	-	-	-	806	10.0	-	-	-	-	-	-	-	-	7,257	90.0	8,063	58.0	806	7,257	-
Subtotal	897	8.3	100	0.9	2,433	22.4	45	0.4	33	0.3	-	-	110	1.0	7,257	66.7	10,876	78.2	1,493	8,744	638
B. Operational Costs																					
Travel and Per Diem	68	84.6	-	-	12	15.4	-	-	-	-	-	-	-	-	-	-	80	0.6	24	44	12
Administration	2	5.0	-	-	30	95.0	-	-	-	-	-	-	-	-	-	-	32	0.2	-	23	9
Accommodation	-	-	-	-	64	100.0	-	-	-	-	-	-	-	-	-	-	64	0.5	-	46	18
Labour	-	-	-	-	130	100.0	-	-	-	-	-	-	-	-	-	-	130	0.9	-	91	39
Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	179	100.0	-	-	-	-	-	-	-	-	-	-	179	1.3	125	-0	54
Credit	-	-	-	-	-	-	-	-	-	-	-	-	6	100.0	-	-	6	-	-	6	-
Training	110	72.4	-	-	11	7.5	-	-	31	20.1	-	-	-	-	-	-	152	1.1	-	140	11
Outreach	-	-	10	90.0	1	10.0	-	-	-	-	-	-	-	-	-	-	11	0.1	-	11	-
Works	-	-	-	-	119	5.0	-	-	-	-	2,258	95.0	-	-	-	-	2,377	17.1	238	2,139	-
Subtotal	179	5.9	10	0.3	547	18.0	-	-	31	1.0	2,258	74.5	6	0.2	-	-	3,030	21.8	386	2,501	143
Total PROJECT COSTS	1,077	7.7	110	0.8	2,980	21.4	45	0.3	64	0.5	2,258	16.2	116	0.8	7,257	52.2	13,906	100.0	1,880	11,245	781

3.3 Component 3: Priority 1 Sub-basin Projects for Immediate Implementation

3.3.1 Project KIWMP1: Strategic Wetland Classification

Table 3-73 KIWMP1 Strategic Wetland Classification Cost Summary by Sub-component

Basin w ide
KAGERA BASIN Integrated Watershed Management Project: Strategic Wetlands Classification
Components Project Cost Summary

	(Rwandan Francs '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Development of a Wetlands Classification System	895,877	763,385	1,659,261	1,469	1,251	2,720	46	37
2. Classification of Kagera Wetlands	482,406	452,175	934,581	791	741	1,532	48	21
3. Development of Wetlands Management Plans	622,865	602,747	1,225,612	1,021	988	2,009	49	27
4. Project Coordination and Management	343,152	323,547	666,700	563	530	1,093	49	15
5. NELSAP, NLO and PMB /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	2,344,300	2,141,853	4,486,154	3,843	3,511	7,354	48	100
Physical Contingencies	234,430	214,185	448,615	384	351	735	48	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	2,578,730	2,356,039	4,934,769	4,227	3,862	8,090	48	110

\a NELSAP, NLO and PMP Investment and operational costs are included in Component 1 Programme Management and Administration

Table 3-74 KIWMP1 Strategic Wetland Classification Expenditure Accounts by Sub-component

Basin w ide

KAGERA BASIN Integrated Watershed Management Project: Strategic Wetlands Classificatio

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Development of a Wetlands Classification System	Classification of Kagera Wetlands	Development of Wetlands Management Plans	Project Coordination and Management	NELSAP, NLO and PMB	Total
I. Investment Costs						
A. Research Staff	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-
C. Inernational Consultants	1,320	792	1,056	-	-	3,168
D. Regional Consultants	845	440	651	-	-	1,936
E. Local Staff	176	106	141	-	-	422
F. Transport	-	-	-	248	-	248
G. Office and Accommodation	-	-	-	-	-	-
H. Office Furniture and Equipment	-	-	-	19	-	19
I. Hydro-meterological Equipment	-	-	-	-	-	-
J. Alternative Livelihoods Equipment	-	-	-	-	-	-
K. Basin Outreach	-	-	-	-	-	-
L. Civil Works	-	-	-	-	-	-
M. Surveys	-	-	-	-	-	-
N. Credit and Revolving Funds	-	-	-	-	-	-
O. Training	-	-	-	-	-	-
P. Administration Costs	-	-	-	-	-	-
Total Investment Costs	2,341	1,338	1,848	267	-	5,793
II. Recurrent Costs						
A. Research Staff	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-
C. International Consultants	208	112	162	-	-	482
D. Regional Consultants	20	12	16	-	-	48
E. Local Staff	7	4	5	33	-	49
F. Transport	81	29	38	211	-	359
G. Office and Equipment	-	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-
J. Basin OUtreach	330	187	138	551	-	1,206
K. Civil Works	-	-	-	-	-	-
L. Surveys	-	-	-	-	-	-
M. Credit and Revolving Funds	-	-	-	-	-	-
N. Training	-	-	-	-	-	-
O. Administration	6	4	4	140	-	153
Total Recurrent Costs	651	348	362	935	-	2,296
Total PROJECT COSTS	2,992	1,685	2,210	1,202	-	8,090
Taxes	395	207	299	285	-	1,187
Foreign Exchange	1,377	815	1,087	583	-	3,862

Table 3-75 KIWMP1 Strategic Wetland Classification Disbursement Accounts by Financier

Basin wide

KAGERA BASIN Integrated Watershed Management Project: Strategic Wetlands Classification

Disbursement Accounts by Financiers

(US$ Million)

	Donor		NELSAP		Central Government		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%			
A. Goods and Services											
Research	-	-	-	-	-	-	-	-	-	-	-
Consultancy	4.52	88.6	-	-	0.58	11.4	5.10	63.1	3.17	1.36	0.58
Services by Local Staff	-	-	-	-	0.46	100.0	0.46	5.6	-	0.32	0.14
Training Services	-	-	-	-	-	-	-	-	-	-	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-
Other Services	-	-	-	-	-	-	-	-	-	-	-
Goods	0.19	70.0	-	-	0.08	30.0	0.27	3.3	0.18	0.01	0.08
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	4.71	80.8	-	-	1.12	19.2	5.83	72.0	3.35	1.68	0.80
B. Operational Costs											
Travel and Per Diem	0.49	72.1	-	-	0.19	27.9	0.68	8.4	0.10	0.38	0.19
Administration	0.00	5.0	-	-	0.01	95.0	0.01	0.1	-	0.01	-
Accommodation	0.01	3.8	-	-	0.14	96.2	0.14	1.8	0.02	0.08	0.04
Labour	-	-	-	-	0.02	100.0	0.02	0.2	-	0.01	0.00
Management	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	0.21	100.0	0.21	2.6	0.15	-	0.06
Credit	-	-	-	-	-	-	-	-	-	-	-
Training	-	-	-	-	-	-	-	-	-	-	-
Outreach	-	-	1.02	84.9	0.18	15.1	1.21	14.9	0.24	0.87	0.09
Works	-	-	-	-	-	-	-	-	-	-	-
Subtotal	0.49	21.8	1.02	45.2	0.75	32.9	2.26	28.0	0.51	1.36	0.39
Total PROJECT COSTS	5.20	64.3	1.02	12.7	1.86	23.0	8.09	100.0	3.86	3.04	1.19

3.3.2 Project KIWMP2: Management of Trans-boundary RAMSAR Sites

Table 3-76 KIWMP2 Management of Tran-boundary RAMSAR Sites Cost Summary by Sub-component

Uganda and Tanzania

KAGERA BASIN Integrated Watershed Management Project: KIWMP2 SAMUKA+ Ramsar Site Management

Components Project Cost Summary

	(Ugandan Shilling '000)			(US$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Development of a Management Plan for SAMUKA+	581,322	891,845	1,473,167	239	366	605	61	11
2. Implementation of the Management Plan for SAMUKA+	3,687,790	1,350,585	5,038,376	1,513	554	2,067	27	38
3. Scaling up to Other Kagera Wetlands	1,064,043	1,870,592	2,934,635	437	768	1,204	64	22
4. Project Coordination and Management	2,730,322	1,201,624	3,931,946	1,120	493	1,613	31	29
5. NELSAP NLO and PMB /a	-	-	-	-	-	-	-	-
Total BASELINE COSTS	8,063,477	5,314,646	13,378,124	3,309	2,181	5,490	40	100
Physical Contingencies	806,348	531,465	1,337,812	331	218	549	40	10
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	8,869,825	5,846,111	14,715,936	3,640	2,399	6,039	40	110

\a NELSAP, NLO and PMB investment and operational are included in Component 1 Programme Management and Administration

Table 3-77 KIWMP2 Management of Trans-boundary RAMSAR Sites Expenditure Accounts by Sub-component

Uganda and Tanzania

KAGERA BASIN Integrated Watershed Management Project: KIWMP2 SAMUKA+ Ramsar Site Management

Expenditure Accounts by Components - Totals Including Contingencies

(US$ '000)

	Development of a Management Plan for SAMUKA+	Implementation of the Management Plan for SAMUKA+	Scaling up to Other Kagera Wetlands	Project Coordination and Management	NELSAP NLO and PMB	Total
I. Investment Costs						
A. Research Staff	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-
C. Inernational Consultants	352	572	792	-	-	1,716
D. Regional Consultants	114	141	189	-	-	444
E. Local Staff	73	65	185	61	-	383
F. Transport	-	-	-	249	-	249
G. Office and Accommodation	-	-	-	-	-	-
H. Office Furniture and Equipment	7	7	7	38	-	60
I. Hydro-meterological Equipment	15	10	24	-	-	50
J. Alternative Livelihoods Equipment	-	9	-	-	-	9
K. Basin Outreach	-	-	-	-	-	-
L. Civil Works	-	4	-	-	-	4
M. Surveys	8	1	4	48	-	61
N. Credit and Revolving Funds	-	1,100	-	-	-	1,100
O. Training	-	59	-	-	-	59
P. Administration Costs	-	-	-	-	-	-
Total Investment Costs	569	1,969	1,202	395	-	4,135
II. Recurrent Costs						
A. Research Staff	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-
C. International Consultants	13	21	30	-	-	64
D. Regional Consultants	25	10	36	-	-	71
E. Local Staff	4	3	3	48	-	57
F. Transport	25	22	19	162	-	229
G. Office and Equipment	-	-	-	-	-	-
H. Hrdro-metereological Equipment	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-
J. Basin OUtreach	29	23	35	997	-	1,084
K. Civil Works	-	1	-	-	-	1
L. Surveys	-	-	-	-	-	-
M. Credit and Revolving Funds	-	165	-	-	-	165
N. Training	-	59	-	-	-	59
O. Administration	-	-	-	173	-	173
Total Recurrent Costs	96	305	122	1,380	-	1,903
Total PROJECT COSTS	665	2,274	1,325	1,775	-	6,039
Taxes	69	83	128	307	-	588

Table 3-78 KIMPW2 Management of Trans-boundary RAMSAR Sites Disbursement Accounts by Financier

Uganda and Tanzania
KAGERA BASIN Integrated Watershed Management Project: KIWMP2 SAMUKA+ Ramsar Site Management
Disbursement Accounts by Financiers
(US$ Million)

	Donor		NELSAP		Central Government		Line Ministries		Microfinance		Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Exch.	Taxes)	Taxes
A. Goods and Services															
Research	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Consultancy	2.03	93.8	-	-	0.13	6.2	-	-	-	-	2.16	35.8	1.72	0.31	0.13
Services by Local Staff	-	-	-	-	0.43	100.0	-	-	-	-	0.43	7.1	-	0.30	0.13
Training Services	0.06	100.0	-	-	-	-	-	-	-	-	0.06	1.0	-	0.06	-
Credit Services	-	-	-	-	-	-	-	-	1.10	100.0	1.10	18.2	-	1.10	-
Other Services	-	-	0.04	90.0	0.00	10.0	-	-	-	-	0.05	0.8	-	0.05	-
Goods	0.26	69.4	-	-	0.11	29.0	0.01	1.6	-	-	0.38	6.3	0.27	0.02	0.09
Works	-	-	-	-	-	-	0.00	100.0	-	-	0.00	0.1	0.00	0.00	-
Subtotal	2.35	56.2	0.04	1.0	0.68	16.2	0.01	0.2	1.10	26.3	4.18	69.3	1.99	1.85	0.35
B. Operational Costs															
Travel and Per Diem	0.19	78.6	-	-	0.05	21.4	-	-	-	-	0.25	4.1	0.08	0.12	0.05
Administration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accommodation	0.01	3.2	-	-	0.17	96.8	-	-	-	-	0.17	2.9	0.02	0.10	0.05
Labour	-	-	-	-	0.01	100.0	-	-	-	-	0.01	0.2	-	0.01	0.00
Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	0.12	100.0	-	-	-	-	0.12	1.9	0.08	-	0.03
Credit	-	-	-	-	-	-	-	-	0.17	100.0	0.17	2.7	-	0.17	-
Training	0.05	92.5	-	-	0.00	7.5	-	-	-	-	0.06	1.0	-	0.05	0.00
Outreach	-	-	0.91	84.3	0.17	15.7	-	-	-	-	1.08	17.9	0.23	0.76	0.09
Works	-	-	-	-	0.00	25.0	0.00	75.0	-	-	0.00	-	0.00	0.00	-
Subtotal	0.26	13.7	0.91	49.2	0.52	28.1	0.00	-	0.17	8.9	1.86	30.7	0.41	1.21	0.24
Total PROJECT COSTS	2.61	43.1	0.96	15.8	1.20	19.9	0.01	0.2	1.27	20.9	6.04	100.0	2.40	3.05	0.59

3.4 Component 4: Programme Capacity Building and Policy Development

Table 3-79 Component 4: Programme Capacity Building and Policy Development Detailed Cost Table

Kagera Basin
KAGERA BASIN Integrated Watershed Management Project: NELSAP Management, Administration and Capacity Building
Table 2. Capacity Buidling and Policy Development
Detailed Costs

		Quantities						Unit Cost	Base Cost (US$)						Parameters (	
	Unit	2013	2014	2015	2016	2017	Total	(US$)	2013	2014	2015	2016	2017	Total	Phy. Cont. Rate	For. Exch.
I. Investment Costs																
A. Training /a																
Internationally recruited staff	months	-	5	10	10	10	35	20,000	-	100,000	200,000	200,000	200,000	700,000	10.0	100.0
Regionally recruited staff	months	-	20	30	30	30	110	4,000	-	80,000	120,000	120,000	120,000	440,000	10.0	100.0
Locally recruited staff	months	24	24	24	24	24	120	1,500	36,000	36,000	36,000	36,000	36,000	180,000	10.0	0.0
Subtotal									36,000	216,000	356,000	356,000	356,000	1,320,000		
B. Monitoring and Evalaution /b																
Internationally recruited staff	months	5	10	10	10	10	45	20,000	100,000	200,000	200,000	200,000	200,000	900,000	10.0	100.0
Regionally recruited staff	months	-	20	30	30	30	110	4,000	-	80,000	120,000	120,000	120,000	440,000	10.0	100.0
Locally recruited staff	months	24	24	24	24	24	120	1,500	36,000	36,000	36,000	36,000	36,000	180,000	10.0	0.0
Subtotal									136,000	316,000	356,000	356,000	356,000	1,520,000		
C. Basin Outreach Unit																
Internationally recruited staff	months	10	10	10	10	10	50	20,000	200,000	200,000	200,000	200,000	200,000	1,000,000	10.0	100.0
Regionally recruited staff	months	30	30	30	30	30	150	4,000	120,000	120,000	120,000	120,000	120,000	600,000	10.0	100.0
Locally recruited staff	months	-	-	-	-	-	-		-	-	-	-	-	-	10.0	0.0
Subtotal									320,000	320,000	320,000	320,000	320,000	1,600,000		
D. Research																
Doctoral Researcher Remuneration	months	-	24	24	24	-	72	1,500	-	36,000	36,000	36,000	-	108,000	10.0	100.0
Masters Researcher Remuneration	months	-	12	12	-	-	24	1,250	-	15,000	15,000	-	-	30,000	10.0	100.0
Research Supervisor Remuneration	months	-	6	6	6	-	18	4,000	-	24,000	24,000	24,000	-	72,000	10.0	100.0
University Tuition Fees for Doctoral Researchers	months	-	24	24	24	-	72	500	-	12,000	12,000	12,000	-	36,000	10.0	100.0
University Tuition Fees for Masters Researchers	months	-	12	12	-	-	24	250	-	3,000	3,000	-	-	6,000	10.0	100.0
Subtotal									-	90,000	90,000	72,000	-	252,000		
E. Transport																
Vehicles 4x4	unit	-	-	-	-	-	-		-	-	-	-	-	-	10.0	0.0
Saloon Car	unit	1	-	-	-	-	1	30,000	30,000	-	-	-	-	30,000	10.0	70.0
Mini Bus	unit	1	-	-	-	-	1	35,000	35,000	-	-	-	-	35,000	10.0	70.0
Bicycles	unit	-	-	-	-	-	-		-	-	-	-	-	-	10.0	0.0
Subtotal									65,000	-	-	-	-	65,000		
F. Office Equipment																
Office Furniture	set	3	-	-	-	-	3	10,000	30,000	-	-	-	-	30,000	10.0	20.0
Guest House Furniture	set	-	-	-	-	-	-		-	-	-	-	-	-	10.0	0.0
Computers	unit	10	-	-	-	-	10	800	8,000	-	-	-	-	8,000	10.0	70.0
Plan Printer	unit	1	-	-	-	-	1	800	800	-	-	-	-	800	10.0	100.0
DTP Printer	unit	3	-	-	-	-	3	500	1,500	-	-	-	-	1,500	10.0	70.0
Subtotal									40,300	-	-	-	-	40,300		
Total Investment Costs									597,300	942,000	1,122,000	1,104,000	1,032,000	4,797,300		
II. Recurrent Costs																
A. Per Diems																
International Staff	days	450	750	900	900	900	3,900	25	11,250	18,750	22,500	22,500	22,500	97,500	10.0	0.0
Regional Consultants	days	900	2,100	2,700	2,700	2,700	11,100	15	13,500	31,500	40,500	40,500	40,500	166,500	10.0	0.0
Subtotal									24,750	50,250	63,000	63,000	63,000	264,000		
B. Aifares																
International Flights	number	3	5	6	6	6	26	900	2,700	4,500	5,400	5,400	5,400	23,400	10.0	70.0
Regional Flights	number	6	14	18	18	18	74	500	3,000	7,000	9,000	9,000	9,000	37,000	10.0	70.0
Subtotal									5,700	11,500	14,400	14,400	14,400	60,400		
C. Local Staff																
Office staff	months	108	108	108	108	108	540	100	10,800	10,800	10,800	10,800	10,800	54,000	10.0	0.0
Guest house staff	months	-	-	-	-	-	-		-	-	-	-	-	-	10.0	0.0
Semi-skilled Labour	months	-	-	-	-	-	-		-	-	-	-	-	-	10.0	0.0
Unskilled Labour	months	-	-	-	-	-	-		-	-	-	-	-	-	10.0	0.0
Subtotal									10,800	10,800	10,800	10,800	10,800	54,000		
D. Transport																
Vehicle 4x4	months	-	-	-	-	-	-		-	-	-	-	-	-	10.0	0.0
Vehicle saloon car	months	12	12	12	12	12	60	400	4,800	4,800	4,800	4,800	4,800	24,000	10.0	70.0
Vehicle minibus	months	12	12	12	12	12	60	400	4,800	4,800	4,800	4,800	4,800	24,000	10.0	70.0
Subtotal									9,600	9,600	9,600	9,600	9,600	48,000		
E. Office and Accommodation																
Office rental	months	12	12	12	12	12	60	1,000	12,000	12,000	12,000	12,000	12,000	60,000	10.0	0.0
Office running costs	months	12	12	12	12	12	60	1,000	12,000	12,000	12,000	12,000	12,000	60,000	10.0	25.0
Softw are licences	months	-	-	-	-	-	-		-	-	-	-	-	-	10.0	0.0
Guest house rental	months	-	-	-	-	-	-		-	-	-	-	-	-	10.0	0.0
Meeting Place rental	number	6	12	12	12	12	54	100	600	1,200	1,200	1,200	1,200	5,400	10.0	0.0
Subtotal									24,600	25,200	25,200	25,200	25,200	125,400		
F. Training																
Courses by NGOs	number	4	8	16	16	8	52	1,500	6,000	12,000	24,000	24,000	12,000	78,000	10.0	0.0
International Courses	number	2	4	8	8	4	26	750	1,500	3,000	6,000	6,000	3,000	19,500	10.0	100.0
Ad hoc training	number	2	4	8	8	4	26	1,500	3,000	6,000	12,000	12,000	6,000	39,000	10.0	0.0
Subtotal									10,500	21,000	42,000	42,000	21,000	136,500		
G. Basin Outreach																
Travel for Attendees	per event	2	4	6	8	8	28	56,250	112,500	225,000	337,500	450,000	450,000	1,575,000	10.0	70.0
Per diems for attendees	per event	2	4	6	8	8	28	30,000	60,000	120,000	180,000	240,000	240,000	840,000	10.0	0.0
Publications and Promotion	each	2	4	6	8	8	28	1,000	2,000	4,000	6,000	8,000	8,000	28,000	10.0	15.0
Conference Organisation	number	2	4	6	8	8	28	10,000	20,000	40,000	60,000	80,000	80,000	280,000	10.0	25.0
Community Mobilisation	group	2	4	6	8	8	28	500	1,000	2,000	3,000	4,000	4,000	14,000	10.0	0.0
Subtotal									195,500	391,000	586,500	782,000	782,000	2,737,000		
Total Recurrent Costs									281,450	519,350	751,500	947,000	926,000	3,425,300		
Total									878,750	1,461,350	1,873,500	2,051,000	1,958,000	8,222,600		

\a all sub-basin level training (i.e. involving training from staff of two or more KIWMP projects) will be handled either in house or using regionally and internationally appointed academic institutions, consultancies and NGOs.
\b Includes establishing MIS and metadatabases

Table 3-80 Component 4 Expenditure Accounts

Kagera Basin
KAGERA BASIN Integrated Watershed Management Project: NELSAP Management, Administration and Capacity Building
Expenditure Accounts Breakdown
(US$ '000)

	Base Cost				Physical Contingencies				Price Contingencies				Total Incl. Cont.				Base Costs + Price Cont. on Base Costs	Physical Cont. Plus Price Cont. on Physical Cont.
	For. Exch.	Local (Excl. Taxes)	Duties & Taxes	Total	For. Exch.	Local (Excl. Taxes)	Duties & Taxes	Total	For. Exch.	Local (Excl. Taxes)	Duties & Taxes	Total	For. Exch.	Local (Excl. Taxes)	Duties & Taxes	Total		
I. Investment Costs																		
A. Research Staff	216	-	-	216	22	-	-	22	-	-	-	-	238	-	-	238	216	22
B. Tuition Fees	36	-	-	36	4	-	-	4	-	-	-	-	40	-	-	40	36	4
C. Inernational Consultants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D. Regional Consultants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E. Local Staff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F. Transport	46	-0	20	65	5	-0	2	7	-	-	-	-	50	-0	21	72	65	7
G. Office and Accommodation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H. Office Furniture and Equipment	13	15	12	40	1	2	1	4	-	-	-	-	15	17	13	44	40	4
I. Hydro-meterological Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J. Alternative Livelihoods Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K. Basin Outreach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L. Civil Works	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M. Surveys	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N. Credit and Revolving Funds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
O. Training	4,080	270	90	4,440	408	27	9	444	-	-	-	-	4,488	297	99	4,884	4,440	444
P. Administration Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q. Project Preparation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Investment Costs	4,391	285	121	4,797	439	29	12	480	-	-	-	-	4,830	314	133	5,277	4,797	480
II. Recurrent Costs																		
A. Research Staff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B. Tuition Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C. International Consultants	-	68	29	98	-	7	3	10	-	-	-	-	-	75	32	107	98	10
D. Regional Consultants	-	167	-	167	-	17	-	17	-	-	-	-	-	183	-	183	167	17
E. Local Staff	-	38	16	54	-	4	2	5	-	-	-	-	-	42	18	59	54	5
F. Transport	76	-0	33	108	8	-0	3	11	-	-	-	-	83	-0	36	119	108	11
G. Office and Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H. Hydro-meterological Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I. Alternative Livelihoods Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J. Basin Outreach	1,177	1,088	473	2,737	118	109	47	274	-	-	-	-	1,294	1,197	520	3,011	2,737	274
K. Civil Works	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L. Surveys	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M. Credit and Revolving Funds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N. Training	20	105	12	137	2	11	1	14	-	-	-	-	21	116	13	150	137	14
O. Administration	15	74	36	125	2	7	4	13	-	-	-	-	17	82	40	138	125	13
Total Recurrent Costs	1,287	1,540	598	3,425	129	154	60	343	-	-	-	-	1,416	1,694	658	3,768	3,425	343
Total	5,678	1,825	720	8,223	568	183	72	822	-	-	-	-	6,246	2,008	791	9,045	8,223	822

Table 3-81 Component 4 Disbursement Accounts by Financier

Kagera Basin
KAGERA BASIN Integrated Watershed Management Project: NELSAP Management, Administration and Capacity Building
Disbursement Accounts by Financiers
(US$ '000)

	Donor		NELSAP		Central Government			Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	Amount	%			
A. Goods and Services												
Research	277	100.0	-	-	-	-	-	277	3.1	277	-	-
Consultancy	4,488	100.0	-	-	-	-	-	4,488	49.6	4,488	-	-
Services by Local Staff	-	-	297	65.2	158	34.8	-	455	5.0	-	339	117
Training Services	-	-	-	-	-	-	-	-	-	-	-	-
Credit Services	-	-	-	-	-	-	-	-	-	-	-	-
Other Services	-	-	-	-	-	-	-	-	-	-	-	-
Goods	81	70.0	-	-	35	30.0	-	116	1.3	65	17	34
Works	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	4,846	90.8	297	5.6	193	3.6	-	5,336	59.0	4,830	355	151
B. Operational Costs												
Travel and Per Diem	305	85.4	-	-	52	14.6	-	357	3.9	47	258	52
Administration	-	-	-	-	-	-	-	-	-	-	-	-
Accommodation	-	-	-	-	138	100.0	-	138	1.5	17	82	40
Labour	-	-	-	-	-	-	-	-	-	-	-	-
Management	-	-	-	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	53	100.0	-	53	0.6	37	-	16
Credit	-	-	-	-	-	-	-	-	-	-	-	-
Training	137	91.4	-	-	13	8.6	-	150	1.7	21	116	13
Outreach	-	-	2,363	78.5	648	21.5	-	3,011	33.3	1,294	1,197	520
Works	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	442	11.9	2,363	63.7	903	24.4	-	3,708	41.0	1,416	1,652	640
Total PROJECT COSTS	5,288	58.5	2,660	29.4	1,096	12.1	-	9,045	100.0	6,246	2,008	791

4. Consolidated Programme Cost Estimate

Table 4-1 KIWMP Programme Costs by Component and Project, 2013-2017, US$ '000

Component number	Component Title	Country	Project Number	Project type	Project Title	Total Costs in US$ '000						Component Costs
						2013	2014	2015	2016	2017	Total	
1	Programme Coordination and Management	Basin wide				11,316	10,245	4,317	4,209	4,063	34,149	34,149
2	KIWMP Country Projects	Burundi	B1	WSM	Integrated Watershed Management, Akanyaru Sub-watershed	15,741	20,354	33,757	36,227	39,331	145,410	557,393
		Burundi	B2	WSM	Stabilisation of banks of Watercourses and Hillside Afforestation	8,329	9,627	16,012	16,671	17,327	67,968	
		Burundi	B3	WSM	Hill irrigation & rainwater harvesting in Cankuzo, Karuzi, Muyinga and Ruyigi Prov.	6,998	8,087	13,523	15,005	16,469	60,083	
		Burundi	BW1	WETLANDS	Protection of wetland ecosystems thru environmental flows	156	144	145	145	145	736	
		Burundi	BW2	WETLANDS	Alternative Livelihoods for Wetland Communities thru ecosystem approach	235	225	229	230	227	1,145	
		Burundi	BW3	WETLANDS	Impacts on wetlands of water harvesting & development of G-water resources	192	159	159	159	159	828	
		Rwanda	R1	WSM	SWC, Improved Fodder Production and Reaforestation, Nyaguru District in Akanyaru	5,799	6,262	10,623	12,898	15,125	50,707	
		Rwanda	R2	WSM	Rainwater harvesting, SSI, fruit & fodder trees, Kagitumbu sub watershed	7,681	7,745	13,077	16,204	18,334	63,041	
		Rwanda	RW3	WSM	Feasibility Study for Improved Fisheries in Lake Muhazi	363	213				576	
		Rwanda	RW1	WETLANDS	Protection of wetland ecosystems thru environmental flows	157	144	145	145	145	737	
		Rwanda	RW2	WETLANDS	Artificial wetlands for sustainable urban drainage	240	211	225	240	233	1,149	
		Tanzania	T1	WSM	Soil conservation in Karagwe and Ngara District	5,037	5,201	7,515	7,900	7,799	33,453	
		Tanzania	T2	WSM	Feasibility Study (15 villages) Kayanga + Bunazi (new) & Kyaka (New) Townships	3,513	2,056	4,534	5,067	4,661	19,831	
		Tanzania	T3	WSM	Protection & conservation of water sources in Muleba and Birhamulu Districts	3,731	3,711	5,236	5,472	5,413	23,562	
		Tanzania	TW1	WETLANDS	Ruwakajunju, Ngoma and Rshwa Lakes Fisheries Project	819	945	1,251	727	645	4,388	
		Tanzania	TW2	WETLANDS	Robust evidence base to inform management decision-making	749	800	855	826	850	4,081	
		Tanzania	TW3	WETLANDS	Flood management in Bigomba & Burigi Valley, Ngara & Muleba Districts	2,722	2,810	4,664	5,249	5,653	21,098	
		Uganda	U1	WSM	Land rehabilitation in Isingiro District	1,387	1,506	2,266	2,402	2,567	10,128	
		Uganda	U2	WSM	IWRM Project, Rakai district	2,462	2,612	3,679	3,759	3,391	15,903	
		Uganda	U3	WSM	IWRM Maziba Sub watershed	2,303	2,698	4,063	4,019	3,770	16,852	
		Uganda	UW1	WETLANDS	Robust evidence base to inform management decision-making	187	200	214	207	213	1,020	
		Uganda	UW2	WETLANDS	Payments for wetland environmental services	146	161	162	162	161	792	
		Uganda	UW3	WETLANDS	Alternative Livelihoods for Wetland Communities thru ecosystem approach	1,902	2,099	3,177	3,289	3,439	13,906	
3	KIWMP Basin Projects	Basin wide	KIWMP 1	WETLANDS	Strategic Wetlands Classification	1,114	1,338	1,878	1,898	1,862	8,090	14,128
			KIWMP 2	WETLANDS	Management of Transboundary RAMSAR Sites	788	514	2,427	1,176	1,133	6,039	
4	Programme Capacity Building and Policy Development	Basin wide				967	1,607	2,061	2,256	2,154	9,045	9,045
Total KIWMP Costs						85,034	91,677	136,195	146,542	155,268	614,715	614,715

Table 4-1gives the KIWMP costs by Component and Project for Phase 1 of the programme, 2013-2017. Total cost (including 10% contingencies levelled throughout) is US$ 615 million. 6% of costs are attributed to Component 1, Programme Coordination and Management, while a further 1% of costs are allocated to Programme Capacity Building and Policy Development. About 83% of total costs are incurred on WSM Country projects, and 10% are incurred on wetlands projects. Of this percentage, about 22% is on basin wide wetland projects.

The largest share of total cost expenditure goes to Burundi, which has a 45% share of total costs. Rwanda has 19%, Tanzania 17% and Uganda 10%. Basin wide projects have 2% of the total costs, with Components 1 and 4 accounting for the balance of 7%.

Considering expenditure within the Kagera sub-basin as a whole, the programme costs suggest an expenditure of about US$ 40 per capita on the sub basin population and US$ 102 per sub basin hectare over Phase 1 of the programme.

A summary financing plan for KIWMP is given in Table 4-2 (the source of this Table is from the project fiches, though the same data could be derived from the tabulations above). The greatest share of the programme would be borne by parallel finance (47%, which would be sought amongst unspecified donors). The governments of the riparian states are expected to contribute 25%, with additional (very small) contributions required from line ministries and municipalities. Community contributions are about 7%. A relatively high share of project financing by nation states (36%) is not unexpected in WSM projects where much of the investment is at farm level or rural infrastructure and operational costs should be borne directly by beneficiaries.

Table 4-2 KIWMP Summary Financial Plan

Component number	Project Number	Project type	Project Title	Financiers, US$ '000									Total [1/]
				NBTF	NELSAP	GOV	MUNICIPALITY	LINE MINISTRY	NGO	COMMUNITY	MICRO FINANCE	PARALLEL FINANCE	
1			Management Administration and Capacity Building	28,688	1,071	4,390							34,149
	B1	WSM	Integrated Watershed Management, Akanyaru Sub-watershed	3,512	334	21,748			642	14,275	1,258	103,640	145,410
	B2	WSM	Stabilisation of banks of Watercourses and Hillside Afforestation	2,501	48	19,008		14,838	304	5,089		26,179	67,968
	B3	WSM	Hill irrigation & rainwater harvesting in Cankuzo, Karuzi, Muyinga and Ruyigi Prov.	3,417	106	9,582		290	228	3,948	5,899	36,614	60,083
	BW1	WETLANDS	Protection of wetland ecosystems thru environmental flows	452	18	266							736
	BW2	WETLANDS	Alternative Livelihoods for Wetland Communities thru ecosystem approach	492	110	319		45	64		116		1,145
	BW3	WETLANDS	Impacts on wetlands of water harvesting & development of G-water resources	506	20	298		4					828
	R1	WSM	SWC, Improved Fodder Production and Reaforestation, Nyaguru District in Akanyaru	3,369	72	18,070		1,222	1,082	4,878		22,014	50,707
	R2	WSM	Rainwater harvesting, SSI, fruit & fodder trees, Kagitumbu sub watershed	4,327	129	23,756		2,108	1,324	5,863		25,533	63,041
	RW3	WSM	Feasibility Study for Improved Fisheries in Lake Muhazi	392		184							576
	RW1	WETLANDS	Protection of wetland ecosystems thru environmental flows	452	19	266							737
	RW2	WETLANDS	Artificial wetlands for sustainable urban drainage	493	29	390	149					88	1,149
2	T1	WSM	Soil conservation in Karagwe and Ngara District	2,137	71	9,082		2,136	1,078	2,860		16,090	33,453
	T2	WSM	Feasibility Study (15 villages) Kayanga + Bunazi (new) & Kyaka (New) Townships	2,171	373	6,162			246	1,723		9,155	19,831
	T3	WSM	Protection & conservation of water sources in Muleba and Birhamulu Districts	1,954	71	6,579		1,451	1,078	1,876		10,553	23,562
	TW1	WETLANDS	Ruwakajunju, Ngoma and Rshwa Lakes Fisheries Project	1,434	72	2,299		117			173	292	4,388
	TW2	WETLANDS	Robust evidence base to inform management decision-making	2,824		1,257							4,081
	TW3	WETLANDS	Flood management in Bigomba & Burigi Valley, Ngara & Muleba Districts	2,305	226	8,404			404	412	726	8,620	21,098
	U1	WSM	Land rehabilitation in Isingiro District	347	56	2,582		45	64	679	116	6,239	10,128
	U2	WSM	IWRM Project, Rakai district	1,356	70	4,723		931	64	333	116	8,312	15,903
	U3	WSM	IWRM Maziba Sub watershed	1,276	60	3,839		45	64	1,451	116	10,001	16,852
	UW1	WETLANDS	Robust evidence base to inform management decision-making	706		314							1,020
	UW2	WETLANDS	Payments for wetland environmental services	397	102	292							792
	UW3	WETLANDS	Alternative Livelihoods for Wetland Communities thru ecosystem approach	1,077	110	2,980		45	64	2,258	116	7,257	13,906
3	KIWMP 1	WETLANDS	Strategic Wetlands Classification	5,204	1,023	1,862							8,090
	KIWMP 2	WETLANDS	Management of Transboundary RAMSAR Sites	2,606	957	1,200		11			1,265		6,039
4				5,288	2,660	1,096							9,045
Total KIWMP Costs				79,683	7,807	150,951	149	23,289	6,704	45,645	9,899	290,588	614,715

A summary of expenditure under procurements is given in Table 4-3. The largest proportion is civil works (SWC and infrastructure, 59%) of which a significant proportion has been assumed to be funded under parallel finance. International and regional consultancy costs are much less than expenditure required on local staffing.

Table 4-3 Procurement Requirements by Component

Procurement Head	Component				
	1	2	3	4	Total [1/]
Regional Research	0	0	0	277	277
International Consultancy (QCBS)	21,020	6,887	5,691	3,034	36,632
Regional Consultancy (QCBS)	8,883	8,548	2,499	1,811	21,741
Vehicles (ICB)	440	14,842	496	72	15,850
Vehicle op costs	356	14,925	327	53	15,661
Field Equipment (ICB)	0	3,263	81	0	3,344
of which parallel finance	*0*	*64*	*0*	*0*	*64*
Field Equipment (NBF)	0	16	1	0	17
National Staff	1,262	92,205	1,559	471	95,497
Alternative Livelihoods Demo Equipment	0	11,403	1,109	0	12,512
Training (NBF)	0	18,263	119	0	18,382
Training (CQBS)	0	79	0	150	229
Civil Works	0	362,550	5	0	362,555
of which parallel finance	*0*	*276,799*	*0*	*0*	*276,799*
Office and Accommodation (NBF)	1,065	10,296	372	182	11,915
Office and Accommodation (ICB)	0	469	12	0	481
Surveys ICB	0	1,654	5	0	1,659
Surveys NBF	0	3,078	48	0	3,126
Credit	0	218	165	0	383
Government Administation	1,122	574	0	0	1,696
Airfares and travel	0	8	618	1,733	2,359
Conferences	0	0	1,024	1,263	2,287
Crop Inputs	0	8,027	0	0	8,027
Totals	34,148	557,305	14,131	9,046	614,630
[1/] Rounding errors are present					

It would be tedious to tabulate expenditure and disbursement accounts and physical quantities budgeted for the whole programme, but it was worthwhile to examine total programme staffing requirements. These account for 42% of programme expenditure. About 50 person years of internationally funded consultancy is envisaged, 240 person years of regional consultancy, 1,030 person years of national staff and 490 person years of NGO staff. This does not include community organisers, extension workers, office staff and casual labour.

5. Financial and Economic Analysis

5.1 KIWMP Financial and Economic Costs

KIWMP financial costs have been presented by year in Table 4-1 and are as estimated as US$ 614.70 million. It is straightforward to convert these costs into economic prices by following the steps below:

1. Distinguish project costs incurred annually in foreign exchange, local currency and taxes (already available as an input to and output from COSTAB, see for example Table 3-80)
2. Estimate the annual proportion of unskilled labour in local costs (sometimes specified as an input to COSTAB but a proportion also has to be estimated from SWC and other civil engineering unit costs)
3. Multiply costs incurred in foreign exchange by the standard conversion factor (see section 1.3.6) to eliminate the premium paid on foreign exchange
4. Subtract taxes and the value of unskilled labour from local costs
5. Multiply the cost of unskilled labour by the shadow exchange rate (accurate estimates of the shadow wage rate are not available for any of the riparian states: given the high rate of rural under-employment 0.75 has been assumed for the sub basin)
6. Sum the adjusted cost of foreign exchange, the adjusted cost of unskilled labour and local costs less taxes to arrive at an estimate of economic costs.

The economic costs of KIWMP are given in Table 5-1 and are estimated to be US$ 504.40 million in total. This is about 82% of financial costs; a result of eliminating the premium on foreign exchange, eliminating taxes and adjusting unskilled labour by an estimated shadow wage rate.

Table 5-1 KIWMP Economic Cost Summary, 2013-2017 US$ '000

Component number	Component Title	Country	Project Number	Project type	Project Title	Total Economic Costs in US$ '000						Component Costs
						2013	2014	2015	2016	2017	Total	
1	Programme Coordination and Management	Basin wide				7,376	6,790	2,895	2,861	2,757	22,679	22,679
2	KIWMP Country Projects	Burundi	B1	WSM	Integrated Watershed Management, Ngozi Province	12,702	17,923	30,001	32,293	35,159	128,077	467,222
		Burundi	B2	WSM	Stabilisation of Water-courses to reduce erosion & siltation	6,285	8,197	13,766	14,384	15,000	57,632	
		Burundi	B3	WSM	Hill irrigation & rainwater harvesting	5,469	7,054	11,973	13,377	14,759	52,632	
		Burundi	BW1	WETLANDS	Protection of wetland ecosystems thru environmental flows	94	96	96	96	97	479	
		Burundi	BW2	WETLANDS	Alternative Livelihoods for Wetland Communities thru ecosystem approach	149	161	165	166	164	805	
		Burundi	BW3	WETLANDS	Impacts on wetlands of water harvesting & development of G-water resources	120	108	107	107	107	549	
		Rwanda	R1	WSM	SWC on terraces, soil improvement, increased fodder & re-forestation	3,919	5,110	8,808	10,605	12,369	40,811	
		Rwanda	R2	WSM	Rainwater harvesting, SSI, fruit & fodder trees	5,064	6,224	10,697	13,124	14,841	49,949	
		Rwanda	RW3	WSM	Increased fish production (aquaculture)	213	132	0	0	0	345	
		Rwanda	RW1	WETLANDS	Protection of wetland ecosystems thru environmental flows	90	92	92	93	93	460	
		Rwanda	RW2	WETLANDS	Artificial wetlands for sustainable urban drainage	148	142	155	174	168	786	
		Tanzania	T1	WSM	Soil conservation in Karagwe District	3,691	4,388	6,554	6,911	6,800	28,344	
		Tanzania	T2	WSM	Feasibility Study (15 villages) Kayanga + Bunazi (new) & Kyaka (New) Townships	2,031	1,553	3,612	4,040	3,728	14,965	
		Tanzania	T3	WSM	Protection & conservation of water sources in Kagera Basin in Tanzania	2,684	3,107	4,539	4,765	4,708	19,804	
		Tanzania	TW1	WETLANDS	Feasibility study for fisheries Karagwe District + fish ponds in wetlands (new)	537	636	864	537	464	3,039	
		Tanzania	TW2	WETLANDS	Robust evidence base to inform management decision-making	458	537	580	561	577	2,713	
		Tanzania	TW3	WETLANDS	Flood management in Bigomba & Burigi Valley, Ngara & Muleba Districts	1,679	2,182	3,742	4,413	4,761	16,777	
		Uganda	U1	WSM	Land rehabilitation in Isingiro District	980	1,223	1,926	2,088	2,326	8,543	
		Uganda	U2	WSM	Pilot IWRM Project, Rakai district	1,650	2,028	2,989	3,138	3,037	12,841	
		Uganda	U3	WSM	Pilot IWRM Maziba Sub watershed	1,682	2,227	3,465	3,520	3,460	14,355	
		Uganda	UW1	WETLANDS	Robust evidence base to inform management decision-making	106	129	139	135	138	646	
		Uganda	UW2	WETLANDS	Payments for wetland environmental services	81	106	107	108	107	509	
		Uganda	UW3	WETLANDS	Alternative Livelihoods for Wetland Communities thru ecosystem approach	1,379	1,796	2,815	2,999	3,173	12,162	
3	KIWMP Basin Projects	Basin wide	KIWMP 1	WETLANDS	Strategic Wetlands Classification	672	863	1,222	1,235	1,213	5,205	9,588
			KIWMP 2	WETLANDS	Management of Transboundary RAMSAR Sites	493	354	1,968	789	779	4,383	
4	Programme Capacity Building and Policy Development	Basin wide				575	949	1,239	1,406	744	4,914	4,914
Total KIWMP Costs						60,326	74,106	114,518	123,926	131,528	504,404	504,404

5.2 Wetlands Management Programme

5.2.1 Costs of the Wetlands Management Programme

The total financial cost estimated for all wetlands components and sub-components is estimated to be US$ 38.48 million[2] during the period 2013-2017, or about 6% of total programme costs. The breakdown by component is shown by riparian state in Table 5-2 below.

Table 5-2 Total Financial Cost (2013-2017) of Wetlands Management Programme by Riparian State, US$ million

Ref no.	Description	Burundi	Rwanda	Tanzania	Uganda	Total
KIWMP2	Development of a Management Plan for Samuka+			0.22	0.46	0.68
KIWMP2	Implementation of a Management Plan for Samuka+			0.76	1.52	2.28
KIWMP2	Project Coordination and Management of Samuka+			0.35	0.69	1.04
KIWMP2	Scaling up Management Plans to Other Trans boundary Wetlands	0.33	0.33	0.33	0.33	1.32
KIWMP2	Project Coordination and Management of Scaling up Transboundary Management Plans	0.17	0.17	0.17	0.17	0.68
KIWMP1	Development of a Wetlands Classification System	0.75	0.75	0.75	0.75	3.00
KIWMP1	Classification of Kagera Wetlands	0.42	0.42	0.42	0.42	1.68
KIWMP1	Development of Wetlands Management Plans	0.55	0.55	0.55	0.55	2.20
KIWMP1	Project Coordination and Management	0.30	0.30	0.30	0.30	1.20
TW2/UW1	Robust Evidence Base to Inform Management Decision Making			4.08	1.02	5.10
BW1/RW1	Protecting Wetland Ecosystems through Environmental Flows and Sustainable Extractions	0.74	0.74			1.48
RW2	Artificial Wetlands for Sustainable Urban Drainage		1.15			1.15
UW2	Payment for Wetland Ecosystems Services (PET)				0.79	0.79
BW2/UW3	Alternate livelihoods in Wetlands	1.15			13.91	15.05
BW3	Impacts on Wetlands of Water Harvesting and Development of Groundwater Resources	0.83				0.83
Total[1/]		5.23	4.41	7.93	20.91	38.48

[1/] Rounding errors may be present

5.2.2 Benefit Scoping

The total cost estimate is useful, because it immediately suggests the order of magnitude of benefits required to justify the proposed investment. Matching the cost stream (scheduled for an initial five years) with a hypothetical benefit stream with sinusoidal characteristics, total annual benefits over a 20 year period will have to rise to about US$ 7.6 million per annum in the period 2022-2031 to justify the proposed investment at a discount rate of 10%. This is only an order of magnitude: for a project designed for inter-generational benefits a lower discount rate is more appropriate. On the other hand wetland project benefits may be only short-lived compared with WSM projects with a larger proportion of civil works with well-defined maintenance requirements. The "maintenance" requirements for the type of wetlands interventions proposed are not known: a notional figure of 10% per annum in the post-implementation period is proposed.

An annual benefit of US$ 7.6 million would generate an increase of about 0.2% of the present estimated RGDP of US$ 4,336 million (**Table 1-6**). The RGDP is considered to be an under-estimate (see section 1.3) and further the sub-basin economy is expected to grow, so the required percentage increase in future RGDP to justify improved wetland health is small. However, the feasibility of an increase in productivity of this magnitude needs to be considered.

[2] This figure excludes TW1 and TW3, the former a fisheries project dealing with lake fisheries rather than wetlands, the later with strong components of WSM to control flooding. Both sub-components have relatively large costs. However, the figure includes part of the costs of U2 and U3, both of which have specific wetland interventions.

The Kagera wetland area covers about 273,000 ha, of which the project impact area will be about 90,000 ha, which is about 1.5% of the land area of the sub-basin and 35% of the sub-basin's wetland area. If the contribution of wetlands to the RGDP now is about US$ 100 per ha[3] per annum (agricultural land in Kagera contributes about US$ 600 per ha per annum, which is relatively high due to double cropping and irrigation) then this would have to increase by 80% in the impact area to achieve an annual increment of US$ 7.6 million. An 80% increase in the contribution of wetlands to RGDP as a result of the interventions proposed from direct benefits (crops, other plant and animal products, fish, tourism etc.) alone is clearly unfeasible, especially as only Alternative Livelihoods in Wetlands and KWIMP2 aim to improve the production of marketed goods and services in wetland areas. The main thrust of the wetlands management programme is towards improving wetland quality, and therefore increasing wetland indirect benefits from environmental goods and services. In the valuation of RGDP presented in this report wetlands indirect benefits do not appear (nutrient retention, water filtration, flood control, groundwater recharge etc.).

An 80% increase in wetland productivity may be feasible if both indirect as well as direct benefits are estimated[4] - if these indirect benefits can be identified and accepted. Valuing environmental benefits is a vexed subject. Providing tools and data for the improved estimation of the value of environmental benefits will be the subject of UW1 and TW2, so this cost: benefit analysis of the proposed wetland interventions can only be based on limited data and preliminary approaches, resulting in a scoping of benefits rather than a detailed calculation.

Benefit scoping is possible if the available data required to estimate benefits is ordered appropriately. Imposing a hydrological hierarchy on the proposed investment costs assists benefit estimation because it becomes possible to estimate the downstream impacts of improving wetland services at a defined site. The location of the proposed wetland interventions has been specified by sub-watershed during project design. Using this information, Table 5-2 can be disaggregated as shown in Table 5-3.

Table 5-3 Total Financial Cost of Wetlands Management Programme by Sub-watershed, US$ million

Sub watershed	*Wetland Activity*	*US$ m*
Ntungamo		**5.91**
	Robust evidence base to inform management decision-making	0.34
	Alternative Livelihoods for Wetland Communities thru ecosystem approach	5.57
Kagitumba		**7.51**
	Protection of wetland ecosystems thru environmental flows	0.73
	Robust evidence base to inform management decision-making	0.48
	Payments for wetland environmental services	0.39
	Robust evidence base to inform management decision-making	0.34
	Alternative Livelihoods for Wetland Communities thru ecosystem approach	5.57
Kagera 3		**1.02**
	Robust evidence base to inform management decision-making	1.02
Mwisa 2		**1.02**
	Robust evidence base to inform management decision-making	1.02

[3] This implies that wetlands presently provide only 0.6% of RGDP from 4.7% of the Kagera Basin area.
[4] Ecosystems functions and services give a typical global value added of about US$100-200 per ha of freshwater wetland, see Valuing Wetlands, Ramsar Technical Report No. 3 (2006).

Mukungwa		**2.02**
	Management of Trans-boundary RAMSAR Sites	2.02
Kagera 1		**1.15**
	Artificial wetlands for sustainable urban drainage	1.15
Mwisa 1		**1.02**
	Robust evidence base to inform management decision-making	1.02
Ngara		**1.02**
	Robust evidence base to inform management decision-making	1.02
Muyinga		**0.82**
	Impacts on wetlands of water harvesting & development of G-water resources	0.82
Ruvubu 3		**0.73**
	Protection of wetland ecosystems thru environmental flows	0.73
Ruvubu 1		**1.13**
	Protection of wetland ecosystems thru environmental flows	1.13
Kagera 4		**7.05**
	Robust evidence base to inform management decision-making	0.44
	Alternative Livelihoods for Wetland Communities thru ecosystem approach	0.38
	Robust evidence base to inform management decision-making	0.34
	Payments for wetland environmental services	0.79
	Alternative Livelihoods for Wetland Communities thru ecosystem approach	1.13
	Management of Trans-boundary RAMSAR Sites	3.98
Sub-basin wide		**8.09**
	Strategic Wetlands Classification	8.09
Total[1/]		**38.48**

[1/] Rounding errors may be present

The sub-watersheds where wetland component activity has been proposed can be compared with the distribution of sub-basin area, population and RGDP by sub-watershed shown in **Table 1-6**. No wetland project activity has been proposed for the sub-watersheds listed in Table 5-4 below. The exclusion of Cankuzo, Ruvubu 2 and Gitega is reasonable; these sub-watersheds have a small share of sub-basin population and RGDP and all three are in the headwaters of the sub-basin. Therefore environmental damage to the wetlands in these sub-watersheds from up-stream would be expected to be limited. Further, in respect of benefit estimation, no direct or indirect benefits from the proposed wetland projects can be claimed from these sub-watersheds (other than knowledge transfer) because they are all up-stream of project activities. However, the wetlands in other sub-watersheds shown in Table 5-4 would be expected to have much greater importance in terms of their location within the sub-basin.

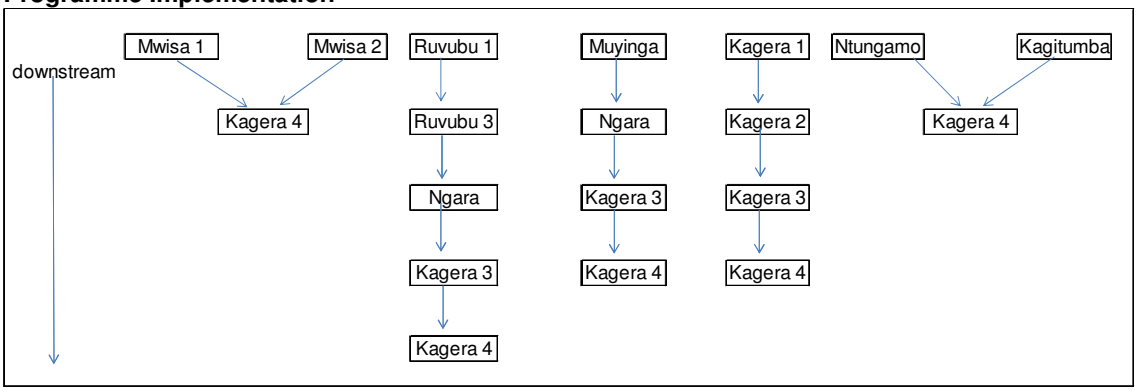
Table 5-4 Sub-watershed Not Included in the Wetlands Management Programme, Share of Sub-basin Area, Population and RGDP

	% of Area in Kagera Sub-basin	*% of Kagera Sub-basin population*	*% of Sub-basin RGDP*
Cankuzo	1%	1%	0%
Kirundo	2%	4%	0%
Kagera 2	2%	3%	3%
Nyabarongo	2%	5%	7%

	% of Area in Kagera Sub-basin	% of Kagera Sub-basin population	% of Sub-basin RGDP
Ruvubu 2	3%	3%	1%
Nyabugogo	3%	6%	13%
Gitega	4%	5%	1%
Karagwe	5%	1%	1%
Mwogo	6%	8%	10%
Akanyaru	9%	15%	11%
Total	37%	50%	47%

Considering downstream impacts of project activities in 12 sub-watersheds where interventions are proposed, a sub-watershed hierarchy can be identified as schematized in Figure 5-1. The rules for downstream impact of project components upstream are conjectural. Though impact must be greater than zero it would not be expected to be large because (sometimes) wetland project sites are small relative to total wetland size. Nevertheless, if 35% of Kagera wetlands will be affected by project activities during implementation the cumulative impact is expected to be significant.

Figure 5-1 Schematic Hierarchy of Sub-watersheds Scheduled for Wetlands Management Programme Implementation



5.2.3 Benefit Estimation

Ecological services are part of the indirect benefits offered by wetlands and include nutrient retention, water filtration, flood control and groundwater re-charge. One of the important out turns of the wetland interventions will be an explicit calculation of the value of the ecological services of wetlands of different types and locations in the Kagera Sub-basin. Once these values are established and accepted, the natural outcome will be to increase them through improved management.

An attempt has been made to value wetland eco-services by sub-watershed, though the estimate is only partial, and focusing on the contribution of wetlands in handling rural, urban and manufacturing effluent, solid waste and flood control. The procedure used is summarized as follows:

- Urban and rural population by sub-watershed is known (see **Table 1-6**)
- Rural effluent produced is assumed to be about 5 m^3 per capita per annum (63 MCM per annum for the sub-basin as a whole), and urban effluent is assumed to be about 30 m^3 per capita per annum (77 MCM per annum)

- The volume of effluent produced by industry requires a disaggregation of manufacturing RGDP by industry which would be time consuming; instead it is assumed that the return on 1 m^3 of water is about US$ 50 of manufactured goods, so the volume of effluent from manufacturing is about 15 MCM per annum (not taking into account water remaining in finished goods)
- Annual maintenance costs of effluent management is about US$ 0.11 per m^3 and this is a service which is carried out by wetlands – except where waste water treatment plants are installed and operating – and is equivalent to about US$ 17 million per annum
- Where wetlands substitute for waste water treatment plants the capital cost of installing plants is also saved: this is also a significant benefit provided by wetlands but it has not been estimated
- Solid waste production is about 0.2 tons per capita per annum from the urban population, suggesting solid waste disposal in the sub-basin is about 515,000 tons per annum; the handling costs of solid waste to landfill is about US$ 5 per ton
- The contribution of wetlands to flood amelioration is very difficult to assess, even with good hydrological data, so it is assumed that the avoided loss of direct flood damage provided by wetlands is 1% of agricultural RGDP which is about US$ 14.7 million per annum. In addition there will be avoided indirect losses (e.g. loss of production in following seasons) but indirect flood losses as a percentage of total losses are usually small (if the dis-benefit of failing to achieve full productivity as a result of flood protection is excluded).

The values of these ecological services provided by wetlands were calculated by sub-watershed and are shown in Table 5-5. There is considerable variability, depending on the area of wetland within a sub-watershed, its population and economic activity. Overall, the total value of services for effluent and solid waste processing is about US$ 126 per ha, which is commensurate with Ramsar estimates for freshwater wetlands based on international data (see footnote 4). Sub watersheds with smaller proportions of wetland areas tend to have higher values of ecological services per total wetland hectare than larger.

The estimates are of course only indicative. For example, “spill-over” effects between sub-watersheds are entirely neglected. A small degraded wetland upstream may work to capacity but not reach the value of service indicated. Effluent or floods may then spill over to larger downstream wetlands which may process effluent and absorb floods both from upstream and its own catchment thus providing a higher value of service than indicated. Other more esoteric wetland benefits (option and existence values) are completely neglected.

Table 5-5 Indicative Values of Selected Wetland Ecological Services

Sub-watershed	*Sub watershed Wetland Area. Ha*	*Wetland Service for Rural Effluent Disposal, US$/ha/pa*	*Wetland Service for Urban Effluent Disposal, US$/ha/pa*	*Wetland Service for Solid Waste Disposal, US$/ha/pa*	*Annual Value of Wetland Service for Flood control US$/ha*
Ntungamo	500	86	71	17	362
Kagitumba	10,000	31	53	14	103
Karagwe	500	154	124	31	738
Kagera 3	14,500	31	32	8	137
Mwisa 2	19,000	10	8	2	21
Mukungwa	8,300	63	82	21	181

Sub-watershed	Sub watershed Wetland Area. Ha	Wetland Service for Rural Effluent Disposal, US$/ha/pa	Wetland Service for Urban Effluent Disposal, US$/ha/pa	Wetland Service for Solid Waste Disposal, US$/ha/pa	Annual Value of Wetland Service for Flood control US$/ha
Nyabarongo	3,400	112	132	35	347
Nyabugogo	9,500	26	222	54	97
Mwogo	1,500	354	639	179	1,148
Kagera 1	59,600	5	43	10	19
Akanyaru	12,000	92	72	20	164
Kagera 2	30,000	6	4	1	22
Mwisa 1	500	93	75	19	71
Kirundo	5,000	58	8	2	9
Ngara	500	136	109	27	115
Muyinga	5,000	18	3	1	6
Ruvubu 3	5,000	51	10	3	22
Ruvubu 1	5,000	174	49	13	58
Cankuzo	500	158	36	10	289
Ruvubu 2	500	429	187	53	749
Gitega	4,200	79	70	21	13
Kagera 4	78,000	4	3	1	7
Average		25	37	9	54

The total value of wetland ecological services in the Kagera Sub-basin is therefore estimated as about US$ 34 million per annum. If this value appeared in sub-basin accounts it would account for about 0.8% of RGDP. Benefits of about US$ 4.5 million per annum are required to justify the interventions proposed in the wetlands management programme. There are three ways to mobilize benefits from wetland ecological service value:

1. Introduce them into the economy as marketed goods; that is requiring users to pay for wetland services through flood and waste water cesses
2. Increase the quality of wetland services, thus increasing their ability to generate direct benefits e.g. tourism
3. Increase the quantity of wetland services (at the same level of service) by improving the resilience of wetlands to absorb waste and increase concentration time of floods.

Using these principles, the following "rules" are introduced to indicate benefits from increased resilience of wetlands:

- The interventions "Protection of wetland ecosystems through environmental flows and sustainable extractions" and "Impacts on wetlands of water harvesting and development of groundwater resources" both lead to 25% increases in the volume of urban and rural effluent processed in the intervention impact area (indirect benefit)
- The intervention "Artificial wetlands for sustainable urban drainage" leads to 25% increases in the volume of urban effluent and land fill processed in the intervention impact area (indirect benefit)
- The intervention "Payment for Wetland Ecosystems Services" introduces 25% of the value of wetland ecosystem services in the intervention's impact area into the RGDP (indirect benefit)

- Alternative Livelihoods for Wetland Communities raises RGDP per capita by 5% within the intervention impact area (direct benefit)
- All the above interventions increase the direct benefits of annual value of wetland service for flood control by 50% in the impact area and indirect benefits by 50% of the increase in direct benefits
- The implementation of the Samuka Ramsar management plan increases the RGDP in Kagera 4 by 5% per annum (equivalent to about US$ 70 per ha per annum and a direct benefit)
- Ramsar management plans in about 20,000 ha in other unspecified areas within Kagera Sub-basin raises RGDP by a similar unit increase (direct benefit)
- Studies such as "Robust evidence base to inform management decision-making" and the classification of wetlands and drafting of wetlands management plans under KIWMP1 lead to no tangible improvement in wetland ecological service values
- "Downstream" benefits are 25% of those accrued in the upper sub-watershed in the sub-watershed immediately below it, 10% in the sub-watershed in the second below and 5% in the third below (these can only be indirect benefits).

Table 5-4 below shows the estimated annual direct and indirect benefits from the Wetlands Management Programme at full development. Following the rules described above the annual total benefit is about US$ 6 million.

Table 5-6 Estimate of Annual Benefits of Wetland Management Programme, US$ '000

Intervention	*Benefits*		*Total*	*% of total benefits*
	Direct	*Indirect*		
Robust Evidence base	0	0	0	0%
Environmental flows	0	203	203	2%
Artificial wetlands	0	799	799	8%
Ecosystem services	0	741	741	7%
Alternative livelihoods	682	0	682	7%
RWH and Groundwater	0	150	150	1%
Samuka RAMSAR	2,772	0	2,772	27%
Other RAMSAR	1,386	0	1,386	13%
Wetland Management Plans	0	0	0	0%
Flood damage	1,985	992	2,977	29%
Downstream impacts	0	641	641	6%
Totals	6,825	3,527	10,352	

Note that internationally traded goods can only figure in direct benefits and are likely to be a small proportion, so little or no adjustment is required to convert benefits to economic values.

5.2.4 Cost Benefit Analysis

The key financial and economic Wetland Management Programme indicators are shown in Table 5-7 below.

Table 5-7 Financial and Economic Indicators of Wetland Management Programme

	Programme Indicators	
	Financial	*Economic*
Net Present Value (NPV), US$ '000	0.55	7.02
Internal Rate of Return (IRR)	10.3%	14.2%
Benefit Cost Ratio (BCR)	1.01	1.17
Switching values:		
Cost change	1.02	1.32
Maintenance change	1.03	1.39
Benefit change	0.99	0.85

The programme performs poorly in financial terms. NPV is close to zero and IRR is similar to the 10% discount rate used. Switching values are close to unity, indicating that only small increases in costs or reductions in benefits would be sufficient to make the programme financially unattractive. This is expected: the intention of the Wetlands Management Programme is not primarily to generate financial returns but to maintain or restore wetland quality.

In economic terms the programme achieves a better rate of performance. It would require a 32% increase in costs, a 40% increase in maintenance costs (taken at 10% of project costs per annum) and a 15% fall in benefit values to achieve an NPV of zero (and an IRR of 10%). NPV is positive and IRR exceeds the discount rate. It is arguable that this type of inter-generational, environmentally oriented investment merits a much lower discount rate, the use of which would improve programme indicators substantially.

It was not possible to derive indicators for the constituent projects of the Wetlands Management Programme. Some of the projects are studies and will not generate benefits. Some wetland benefits are indirect and have to be imputed rather than measured, which leads to inaccuracy and uncertainty. Wetlands have a higher degree of inter-dependence than watersheds, a relationship which is not well understood without much better empirical data than is available.

Cost-benefit analysis is normally used to investigate the financial and economic merits of different investment decisions by comparing their potential to generate revenue. In the case of the Wetlands Management Programme the question of choice does not arise: the required action is the technically correct procedure to maintain and restore wetland quality within the context of available financing. The issue of revenue generation is also unimportant given that very little quantitative data exists to estimate the value of the goods and services wetlands provide and that a large proportion of this value is untraded.

5.3 Watershed Management Programme

5.3.1 Costs of the Watershed Management Programme

The total financial cost estimated for all watershed management components and sub-components is estimated to be US$ 533 million[5] during the period 2013-2017, or about 87% of total programme costs. The breakdown by component is shown by riparian state in Table 5-8 below.

Table 5-8 Watershed Management Programme Total Financial Cost (2013-2017) by Sub-component and Riparian State, US$ million

Ref no.	Description	Burundi	Rwanda	Tanzania	Uganda	Total
B1	Integrated Watershed Management, Akanyaru Sub-watershed	145.41				145.41
B2	Stabilisation of banks of Watercourses and Hillside Afforestation	67.97				67.97
B3	Hill irrigation & rainwater harvesting in Cankuzo, Karuzi, Muyinga and Ruyigi Prov.	60.08				60.08
R1	SWC, Improved Fodder Production and Reforestation, Nyaguru District in Akanyaru		50.71			50.71
R2	Rainwater harvesting, SSI, fruit & fodder trees, Kagitumba sub watershed		63.04			63.04
RW3	Feasibility Study for Improved Fisheries in Lake Muhazi		0.58			0.58
T1	Soil conservation in Karagwe and Ngara District			33.45		33.45
T2	Feasibility Study (15 villages) Kayanga + Bunazi (new) & Kyaka (New) Townships			19.83		19.83
T3	Protection & conservation of water sources in Muleba and Birhamulu Districts			23.56		23.56
TW1	Ruwakajunju, Ngoma and Rshwa Lakes Fisheries Project			4.39		4.39
TW3	Flood management in Bigomba & Burigi Valley, Ngara & Muleba Districts			21.10		21.10
U1	Land rehabilitation in Isingiro District				10.13	10.13
U2	IWRM Project, Rakai district				15.90	15.90
U3	IWRM Maziba Sub watershed				16.85	16.85
		273.46	114.32	102.33	42.88	533.00

[1/] Rounding errors may be present

Watershed management components and sub-components are more heterogeneous than those of the wetlands management programme, but can still be broadly grouped by activity,

[5] This figure includes TW1 and TW3, the former a fisheries project dealing with lake fisheries, the later with strong components of WSM to control flooding. The figure also includes most of the costs of U2 and U3, less the costs already included in the wetlands management programme.

as shown in Table 5-9. The proportion of expenditure is reasonably distributed between activities with 73% directed to soil and water conservation, water storage, re-afforestation and irrigation. Some 14% is allocated to rural infrastructure and a small percentage is allocated to fisheries. The proportion of expenditure on project management and administration is relatively small, but sub-basin costs of this activity (coordination, procurement, training, M&E etc. as distinct from local office costs) are included in Components 1 and 4.

The distribution of watershed management activities is also favourable, as shown in Table 5-10. Only five sub watersheds have no scheduled watershed management activities. These cover 17% of the sub basin; contain 29% of the population and 39% of the RGDP.

Table 5-9 Watershed Management Programme Total Financial Costs by Activity and Riparian State, US$ million

Description	Burundi	Rwanda	Tanzania	Uganda	Total	Year 1	Year 2	Year 3	Year 4	Year 5	% of total
Soil and Water Conservation	70.48	83.98	20.06	36.48	210.99	24.72	28.37	46.91	53.12	57.87	40%
Reafforestation and agroforestry	0.00	0.00	36.36	0.00	36.36	5.35	5.53	8.23	8.76	8.48	7%
Agroforestry and animal husbandry	30.03	6.76	0.00	0.00	36.79	4.70	5.15	8.54	8.98	9.42	7%
Irrigation Development	63.43	0.00	0.00	0.00	63.43	6.42	8.55	14.60	16.01	17.84	12%
Rainwater harvesting	10.51	17.25	3.33	0.00	31.09	3.68	3.92	6.73	7.87	8.89	6%
Riverbank protection	11.19	0.00	0.00	0.00	11.19	1.50	1.55	2.55	2.71	2.88	2%
Farmer Support, Marketing and Input Su	9.46	2.94	2.63	0.00	15.03	1.82	1.92	3.20	3.76	4.34	3%
Fisheries	0.00	0.58	4.02	0.00	4.60	1.09	1.07	1.19	0.66	0.58	1%
Planning and Coordination	0.76	0.00	5.38	0.77	6.91	1.60	1.39	1.47	1.38	1.06	1%
Sustainable management of wetlands	22.19	0.00	1.97	1.43	25.60	3.02	3.51	6.27	6.17	6.63	5%
Alternative livelihoods	0.00	2.60	0.00	1.27	3.87	1.08	0.57	0.72	0.77	0.73	1%
Rural Roads	39.59	0.00	3.62	1.67	44.87	4.42	6.64	10.51	11.40	11.91	8%
Rural Water Supply	6.07	0.00	17.97	0.00	24.04	3.88	2.53	5.36	6.25	6.01	5%
Rural Electrification	7.49	0.00	0.00	0.00	7.49	0.81	1.23	1.82	1.82	1.82	1%
Project Management and Administration	2.27	0.22	6.99	1.26	10.75	2.79	1.91	2.09	1.93	2.02	2%
Total	273.46	114.32	102.33	42.88	533.00	66.89	73.83	120.20	131.60	140.48	

Table 5-10 Watershed Management Programme Total Financial Cost by Activity and Sub watershed, US$ million

	Kagitumba	Karagwe	Kagera 3	Mwisa 2	Nyabugogo	Akanyaru	Kagera 2	Mwisa 1	Kirundo	Ngara	Muyinga	Ruvubu 3	Ruvubu 1	Cankuzo	Ruvubu 2	Gitega	Kagera 4
Soil and Water Conservation	61.04	3.91	3.87	4.31	0.00	75.66	0.64	0.10	0.00	3.56	0.38	1.12	10.59	0.00	10.59	10.91	24.32
Reafforestation and agroforestry	0.00	3.65	3.36	12.60	0.00	0.00	0.45	4.07	0.00	5.55	0.27	0.78	0.00	0.00	0.00	0.00	5.62
Agroforestry and animal husbandry	3.39	0.00	0.00	0.00	0.00	7.42	0.00	0.00	0.00	0.00	0.00	0.00	8.57	0.00	8.57	8.83	0.00
Irrigation Development	0.00	0.00	0.00	0.00	0.00	50.61	0.64	0.00	3.85	0.00	1.15	4.23	0.00	2.95	0.00	0.00	0.00
Rainwater harvesting	8.62	0.00	0.34	0.65	0.00	8.63	0.72	0.07	3.15	1.03	1.06	3.80	0.00	2.42	0.00	0.00	0.59
Riverbank protection	0.00	0.00	0.00	0.00	0.00	1.55	0.00	0.00	0.00	0.00	0.00	0.00	3.18	0.00	3.18	3.28	0.00
Farmer Support, Marketing and Input Su	1.59	0.00	0.27	0.51	0.00	1.35	0.63	0.06	2.84	0.82	0.94	3.39	0.00	2.18	0.00	0.00	0.47
Fisheries	0.00	1.48	1.01	1.08	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44
Planning and Coordination	0.77	0.68	0.59	1.80	0.00	0.76	0.07	0.54	0.00	0.78	0.04	0.11	0.00	0.00	0.00	0.00	0.78
Sustainable management of wetlands	0.91	0.00	0.20	0.39	0.00	0.00	1.22	0.04	6.66	0.61	2.07	7.52	0.00	5.10	0.00	0.00	0.87
Alternative livelihoods	3.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85
Rural Roads	0.00	0.00	0.37	0.71	0.00	39.59	0.21	0.08	0.00	1.12	0.13	0.36	0.00	0.00	0.00	0.00	2.31
Rural Water Supply	0.00	5.50	0.18	5.69	0.00	1.29	0.34	0.04	1.43	0.56	0.49	1.76	0.00	1.10	0.00	0.00	5.65
Rural Electrification	0.00	0.00	0.00	0.00	0.00	7.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Project Management and Administration	0.56	1.56	0.40	2.08	0.00	1.76	0.12	0.17	0.10	0.69	0.09	0.29	0.09	0.07	0.09	0.09	2.58
Total	79.89	16.77	10.60	29.83	0.58	196.12	5.04	5.17	18.02	14.72	6.63	23.37	22.43	13.82	22.43	23.11	44.48
Area	5%	5%	11%	9%	3%	9%	2%	2%	2%	3%	1%	3%	7%	1%	3%	4%	13%
Population	5%	1%	6%	3%	6%	15%	3%	1%	4%	1%	1%	3%	11%	1%	3%	5%	4%
RGDP	8%	2%	11%	3%	8%	13%	4%	0%	0%	1%	0%	1%	2%	1%	2%	0%	5%

5.3.2 An Estimate of the Costs of Watershed Deterioration

Nearly 40% of RGDP is derived from the value of primary goods produced directly from the natural resource base. The growing population and the expansion of production into increasingly marginal land has led to watershed degradation due to loss of soil fertility and erosion, shortage of grazing and loss of woody biomass cover. Formal economic accounts take into account changes in capital stocks of factors of production through investment and depreciation. To estimate economic growth correctly it is important that the stock of natural resources is treated in the same way. However, because many natural resources are neither traded commodities nor have a formal market, it is difficult to quantify depreciation costs in economic terms. However, some very general estimates can be made to estimate:

- The cost of replacing soil fertility which is used over and above annual replacement level (by animal manure, chemical fertiliser etc.)
- The cost of replacing animal fodder that is used over and above its annual replacement level
- The cost of replacing fuel wood and construction timber that exceeds annual growth rates, both in "natural" vegetation and plantations.

The use of fertilisers in the Kagera Basin[6] is probably less than 5 kg/ha p.a. so the non-sustainable use of soil fertility is expected to be high, an observation that is confirmed by IFPRI studies, which estimate losses of 60-100 kg per cultivated ha of NPK per annum in all four riparian States (Nutrient Depletion in the Agricultural Soils of Africa, 2020 Brief 62, IFPRI). The estimate takes into account both nutrient mining and absolute soil loss. The cost of making good this annual loss by increasing chemical fertiliser application would be about US$ 50 per ha p.a. in 2011[7]. Over a cropped area in the basin of two million ha, this amounts to US$ 150 million or 7% of the value of the crops sector of the RGDP (constant 2011 US$ 1,397 million, albeit estimated for different years between 2004 and 2009). To return soil fertility to higher levels would of course cost more; the estimated cost would simply halt the decline.

There are about 3.1 million TLU in the Kagera Basin. This is a reasonably accurate estimate because it was based on total administrative area stock statistics. At a dry matter requirement of 5kg per day per TLU, the total requirement of dry matter by grazing stock in Kagera Basin is estimated as 5.7 million tons pa. Assuming about 60% of this is from "natural" grazing (the balance being from crop residues and hay) then the demand for dry matter from natural grazing is about 3.5 million tons pa. Annual dry matter productivity of lowland grazing in Kagera is about 1.5 tons per ha pa where rainfall is less than 800 mm per annum, increasing to 4 tons per ha pa in upland areas. The area of grazing in the Kagera sub-basin is in the order of 2.7 million ha (derived from vegetation mapping): taking into productivity differences by altitude and accessibility the annual dry matter production from grazing land may be about 3 million tons pa. Dry matter resources may be declining by about 0.5 million tons pa. The cost of replacement of this by, for example incremental hay production would be (at a yield of 5 tons per ha require 85,000 ha with a production cost of about US$ 50 per ha excluding labour) about US$ 4.3 million, or about 0.1% of the RGDP. Again, this cost would simply halt the rate of loss.

[6] Fertiliser use in Rwanda is about 4,000 tons annually over an arable area of two million ha, Burundi uses about half this tonnage on a slightly larger area. About 10% of the area is treated with FYM each year.

[7] FOB fertiliser prices in 2011 are: urea $416 per ton, TSP $530 per ton and MOP $623 per ton (World Bank). Prices have been adjusted for active nutrient content. The ratio of NPK lost through both nutrient mining and soil erosion is assumed to be 3:1:1.

The total use of fuel wood and construction timber per annum (both urban and rural consumption) in Kagera is estimated as in the order of 10 million tons of woody biomass pa (rural fuel wood demand per capita is about 800 kg pa alone and the consumption for building materials may be an additional 10%). The annual incremental yield of woody biomass varies from forest at about 7 m^3 per ha pa, to bush land at about 0.2 m^3 per ha pa. Applying these production figures to the area of physiographic vegetation types in the sub basin suggests an annual production of about 8.7 million tons per annum (converting at 0.6 m^3 per ton), suggesting a deficit of production of about 1.8 million tons per annum. The area required to produce 1.8 million tons of woody biomass under plantation conditions would be about 120,000 ha for which establishment costs would be about US$ 180 million, or 4% of the value of the entire basin RGDP.

Even these superficial calculations show the enormous cost required to achieve environmental sustainability. The depreciation costs of soil loss and unsustainable use of dry matter and woody biomass may be in the order of US$ 335 million per annum and if included in the sub basin accounts would reduce the estimate of RGDP by about 9%, lowering the observed growth rate and implying (since the costs of environmental depreciation are not borne equally throughout the sub basin) that some members of the population, particularly those dependent on primary production may be becoming absolutely disadvantaged in terms of RGDP per capita.

A proposed KIWMP expenditure of about US$ 533 million appears an appropriate response to the problem. Nevertheless the expected impact of the various interventions needs to be quantified and compared. Also there is a methodological problem: whilst the cost of natural resource depreciation can be introduced into the sub basin regional accounts, it cannot be used in cost benefit analysis, which requires the use of the purchase price of productive resources and their residual value (if any) at the end of project life. Since watershed quality is essentially an untraded resource (unless a surrogate value is introduced, such as carbon trading) direct and indirect benefits must be used.

5.3.3 Benefit Estimation

The physical interventions proposed for the Watershed Management Programme were identified from the COSTAB tables, listed by project reference number and subcomponent and classified according to the generalised activities shown in Table 5-11. Since the project locations are known by sub-watershed (see the project fiches: six WSM projects are located in only one or two sub watersheds, others, for example B2 are located in several) it was possible to disaggregate these generalised activities by sub watershed.

Table 5-11 Physical Interventions of the Watershed Management Programme by Sub-watershed

Description	units	Kagitumba	Karagwe	Kagera 3	Mwisa 2	Akanyaru	Kagera 2	Mwisa 1	Kirundo	Ngara	Muyinga	Ruvubu 3	Ruvubu 1	Cankuzo	Ruvubu 2	Gitega	Kagera 4	Total
SWC and Soil fertility enhancement	ha	55,120	17,186	15,533	48,005	86,680	2,442	14,320	3,000	21,682	2,069	6,707	0	2,300	0	0	27,647	302,692
Soil Fertility Enhancement only	ha	100,510	0	0	0	61,230	0	0	0	0	0	0	58,176	0	58,176	59,939	2,000	340,030
Reafforestation	ha	11,500	7,040	6,965	14,932	25,752	1,141	3,373	0	8,763	688	1,995	14,544	0	14,544	14,985	12,702	138,925
Riverbank protection	ha	480	0	0	0	1,440	0	0	0	0	0	0	3,234	0	3,234	3,332	898	12,618
Water storage and supply	number	50	0	72	409	50	176	135	810	310	268	962	0	621	0	0	245	4,108
Gravity Irrigation	ha	1,250	0	36	71	9,250	346	8	1,950	112	598	2,181	0	1,495	0	0	1,414	18,710
Pump irrigation	ha	1,250	0	0	0	1,250	2,250	0	13,500	0	4,050	14,850	0	10,350	0	0	0	47,500
Fish cages and ponds	number	500	7	5	5	0	0	0	0	0	0	0	0	0	0	0	2	520
Rural Roads	km	500	7	7	8	300	51	0	300	5	91	332	0	230	0	0	57	1,887
Rural Water Supply	hh	0	1,700	1,012	3,609	10,000	3,330	216	16,500	3,103	5,301	19,157	0	12,650	0	0	5,421	82,000
Rural electrification	connections	0	0	0	0	24,263	0	0	0	0	0	0	0	0	0	0	0	24,263
Wood burning stoves	number	15,000	0	15	29	136,316	9	3	0	47	5	15	23,760	0	23,760	24,480	27	223,466
Urban water supply	connections	0	3,400	0	3,300	0	0	0	0	0	0	0	0	0	0	0	3,300	10,000
Microcredit	hh	1,000	553	985	1,579	8,000	3,598	130	19,500	1,862	6,061	22,054	0	14,950	0	0	2,228	82,500
Crop storage	units	141	0	0	0	0	13	0	78	0	23	86	0	60	0	0	0	401
Market information	farmers	70,500	0	0	0	0	3,250	0	19,500	0	5,850	21,450	0	14,950	0	0	0	135,500
Alternative livelihoods	hh	2,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,000	3,000
Courses	number	981	71	107	259	1,588	45	58	74	214	42	139	247	57	247	255	227	4,611

In respect of activity distribution:

- The main foci of SWC activity are in Akanyaru (29% of total area of proposed works), Mwisa 2 (16%) and Kagitumba (18%)
- Most water storage proposed is in Ruvubu 3 (20%), Kirundo (20%), Cankuzo (15%) and Mwisa 2 (10%)
- The main areas of gravity irrigation development is located in Akanyaru
- The main areas of pumped irrigation development is located in Ruvubu 3 (31%), Kirundo (28%) and Cankuzo (22%)
- Rural road development will be concentrated in Kagitumba (28%), Akanyaru (16%), Kirundo (16%), Ruvubu 3 (18%) and Cankuzo (12%)
- The main area for potable water supply improvement is Akanyaru (12%), Kirundo (20%), Ruvubu 3 (23%) and Cankuzo (15%)
- Extension to the rural electricity supply is confined to Akanyaru
- The main areas of catchment protection works are in Ruvubu 1 (10%) Ruvubu 2 (10%), Gitega (11%) and Akanyaru (19%).

Overall, the main focus of the WSM programme will be in Akanyaru, Kagitumba, Mwisa 2, Kirundo, Ruvubu 1,2 & 3, Cankuzo, Gitega and Kagera 4.

Benefit value were then estimated for each activity at full development, as follows:

- SWC measures on arable land are expected to result in a 15% increase in the value of crops RGDP per cultivated hectare[8]
- Minor benefits to seepage from water storage structures were estimated assuming 5% loss per annum of which 15% is recovered downstream at a value taken at US$ 0.0022 per m^3 estimated to be the marginal value of water for irrigated crop production
- Benefits to irrigation were assumed to be the incremental benefit from converting from rainfed agriculture (which has a sub basin RGDP of about US$ 650 per ha) assuming irrigation doubles crop RGDP per unit area: this is a conservative estimate as irrigation should lead up to a quintupling of gross margin per ha
- Rural roads are expected to raise the level of regional economic activity: it was assumed that each km of rural road would impact on 2.5km^2 and raise RGDP per km^2 by 2% at full development
- The economic benefits from improved water supply are the subject of numerous studies; following Hutton, Haller and Bartram (WHO 2007)[9] it was assumed that the “willingness to pay” (equivalent to the value of time saved in water collection) was about US$ 18 per capita per annum and health benefits were an additional 25% of this
- Rural electrification also brings strong economic returns; World Bank estimates a consumer surplus of about US$ 0.5 per kwh, so assuming each connection supplies 250 kwh per annum the economic benefit will be about US$ 250 per connection
- Benefits from land reclamation, including protective planting, catchment protection and afforestation were assumed to come mainly from incremental production of woody biomass (valued at the shadow price of fuel wood for the region US$ 10 per

[8] No information is available on cropping patterns, gross margins and the SWC treatments required for the specific areas proposed for works. Therefore an estimate was made of the present RGDP per cropped hectare for each sub watershed as a whole and a percentage increase resulting from SWC was assumed. The assumed benefit from SWC is conservative, as shown by the illustrative estimates of financial benefits to farmers described in the project fiches: increases in yields of over 50% are expected. Nevertheless, we have no information on how yield increases are translated into gross margin benefits: there may well be production and marketing constraints.

[9] Economic and health effects of increasing coverage of low cost household drinking-water supply and sanitation interventions to countries off-track to meet MDG target 10: Background document to the "Human Development Report 2006" WHO 2007

ton, see Habermehl[10] (GTZ 2007) and dry matter (valued at half this); incremental production values of 5 tons per ha of woody biomass and 10 tons per ha of dry matter were assumed
- A wood burning stove is expected to save about 0.25m^3 of fuel wood per annum
- Direct benefits from training were not included in benefits: it could be assumed that a % increase in RGDP per person trained would result: this is not only highly conjectural but also risks double counting benefits already claimed for incremental crop production.

Full benefits from SWC, land reclamation, irrigation and rural roads were assumed to be attained in project year 8. Full benefits from other interventions are expected on completion of investment in project year 5. Benefits are realised approximately linearly.

No benefits were calculated for market centres, input supply and credit: these have financial benefits but have a minor impact on benefits in economic prices. For lack of data, no benefits were assigned to incremental fish production.

To calculate financial benefits, the economic values of electricity and water are substituted by the tariff values. The financial cost of electricity in Burundi in 2011 was only US$ 0.05 per kWh. The rural water tariff for all riparian states was assumed to be US$ 20 per household per annum. The financial and economic benefit estimate is summarized in Table 5-12.

Table 5-12 Benefit Estimate for Watershed Management Programme at Full Development, US$ million per annum

	Financial benefits		*Economic benefits*	
	US$ m	*%*	*US$ m*	*%*
Soil and Water Conservation	31.79	28%	31.79	25%
Reforestation and agroforestry	6.90	6%	6.90	5%
Water storage	0.45	0%	0.45	0%
Irrigation Development	43.34	38%	43.34	34%
Rural Roads	26.44	23%	26.44	21%
Rural Water Supply	3.40	3%	12.10	10%
Rural Electrification	0.30	0%	6.07	5%
Farmer Support, Marketing and Input Supply	0.00	0%	0.00	0%
Total benefits	112.61		127.08	

The estimate is also available by sub watershed. As suggested by the activity distribution shown in Table 5-11, benefit distribution is concentrated in Akanyaru (24%), Kirondo (10%) and Kagitumba (19%). Overall, 66% of project benefits are concentrated in sub watersheds with about 43% of the sub basin area, 33% of the rural population and 25% of RGDP. The stakeholder selection process has therefore been fairly successful in spreading watershed programme activities over the basin, and focussing on the relatively poorer basin population.

Most of the WSM projects need preparation studies before implementation (see the cost estimate for Component 1). Therefore both cost and benefit estimates can only be indicative.

5.3.4 Cost Benefit Analysis

The key financial and economic Watershed Management Programme indicators are shown in Table 5-7 below.

[10] Economic evaluation of the improved household cooking stove dissemination programme in Uganda: German Agency for Technical Cooperation (GTZ), Household Energy Programme

Table 5-13 Financial and Economic Indicators of Watershed Management Programme

	Programme Indicators	
	Financial	*Economic*
Net Present Value (NPV), US$ '000	342.92	408.24
Internal Rate of Return (IRR)	23.1%	28.8%
Benefit Cost Ratio (BCR)	1.88	2.26
Switching values:		
Cost change	1.88	2.26
Maintenance change		
Benefit change	0.53	0.44

The programme performs very well in financial terms[11]. NPV is positive and IRR is well above the 10% discount rate used. It would require a 188% increase in costs, and a 47% reduction in benefit values to achieve an NPV of zero (and an IRR of 10%). Switching values cannot be calculated by manipulating the maintenance charge (taken at 2.5% of project costs per annum). In economic terms the programme achieves an even higher rate of performance. The switching values indicate substantial increases in costs and reductions in benefits would be required to drive the NPV to zero.

The indicators for most of the Watershed Management Programme projects could be derived separately, though (as with the analysis for the WSM programme as a whole) the overhead costs of Components 1 and 4 are not included, so the indicators are over-estimated. Financial indicators are shown in Table 5-14 and economic indicators are shown in Table 5-15.

[11] In the Final Report the opposite case was reported; with rather poor financial returns. This was because of an expansion in the area of SWC and reforestation as a result of discussion with stakeholders and a resulting relative decline in the proportion of benefits from water supply and electricity, which have negative financial benefits.

Table 5-14 Financial Indicators for Projects in the WSM Programme

Project Indicator	B1	B2	B3	R1	R2	T1	T2	T3	TW1	TW3	U1	U2	U3
NPV	44.11	28.93	55.18	21.08	21.86	34.39	-5.71	14.35	2.86	10.31	4.01	1.43	17.21
IRR	16.9%	18.2%	31.1%	19.2%	17.4%	27.4%	2.5%	20.9%	20.9%	21.1%	17.5%	11.8%	27.4%
NPV Benefits	149.77	78.63	98.86	57.71	67.52	59.15	8.94	31.84	6.23	25.70	11.45	13.26	29.67
NPV Costs	105.66	49.70	43.68	36.63	45.66	24.76	14.65	17.49	3.36	15.40	7.44	11.83	12.46
BCR	1.42	1.58	2.26	1.58	1.48	2.39	0.61	1.82	1.85	1.67	1.54	1.12	2.38
Switching value Costs	1.22	1.58	2.26	1.58	1.48	2.39	0.61	1.82	1.85	1.67	1.54	1.12	2.38
Switching value Maintenance													
Switching value Benefits	0.71	0.63	0.44	0.63	0.68	0.42	1.64	0.55	0.54	0.60	0.65	0.89	0.42

Table 5-15 Economic Indicators for Projects in the WSM Programme

Project Indicator	B1	B2	B3	R1	R2	T1	T2	T3	TW1	TW3	U1	U2	U3
NPV	56.99	40.32	63.73	28.38	34.81	38.30	1.56	18.50	4.62	15.10	5.23	5.01	20.27
IRR	20.0%	24.3%	42.2%	25.4%	26.5%	32.8%	14.0%	28.0%	45.6%	35.9%	21.5%	18.9%	37.2%
NPV Benefits	149.77	78.63	98.86	57.71	67.52	59.15	8.94	31.84	6.23	25.70	11.45	13.26	29.67
NPV Costs	92.79	38.32	35.13	29.33	32.71	20.85	7.39	13.34	1.60	10.60	6.22	8.25	9.39
BCR	1.42	2.05	2.81	1.97	2.06	2.84	1.21	2.39	3.89	2.42	1.84	1.61	3.16
Switching value Costs	1.61	2.05	2.81	1.97	2.06	2.84	1.21	2.39	3.89	2.42	1.84	1.61	3.16
Switching value Maintenance													
Switching value Benefits	0.62	0.49	0.36	0.51	0.48	0.35	0.83	0.42	0.26	0.41	0.54	0.62	0.32

5.4 KIWMP Cost Benefit Analysis

The financial and economic cost benefit analysis of the whole programme is presented in Table 5-16 and Table 5-17 respectively. A discount rate of 10% has been used and analysis is taken over a 20 year period. The calculation is no more than repeating the analyses for the wetland management and WSM sub components (see sections 5.2.4 and 5.3.4) and adding in the management costs of Component 1 and 4. There may well be benefits, especially from research, training and basin outreach included in Component 4, but quantification has not been attempted.

The results of the financial analysis remain strongly positive, despite the fact that the start-up costs will be high relative to the benefits, particularly when a high discount rate is used. Attention to tariffing of water supply and electricity (i.e. raising them above 2011 levels) to cover costs would contribute to an increase in estimated financial benefits.

The economic analysis suggests that the programme will bring substantial welfare benefits to the Kagera sub-basin. The NPV is positive, US$ 398 million and the IRR is 25.8%. The BCR is positive. The cost and benefit streams are also robust: it would require a doubling of costs increase to drive NPV zero, or a 50% decrease in the benefits assumed.

Table 5-16 KIWMP Financial Cost Benefit Analysis, US$ m

Comp	Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
	Programme costs																				
1	Programme Coordination and Management	11.32	10.24	4.32	4.21	4.06															
2	Wetlands Management Programme	5.87	6.00	9.62	8.48	8.57	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85
3	Watershed Management Programme	66.89	73.83	120.20	131.60	140.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Programme Capacity Building and Policy Development	0.97	1.61	2.06	2.26	2.15															
	Total Programme Costs	85.03	91.68	136.19	146.54	155.27	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85
	Programme Benefits																				
2&3	Wetlands Management Programme	0.00	0.00	2.07	3.11	4.14	5.18	6.21	7.25	8.28	9.32	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35
2	Watershed Management Programme	0.00	17.38	35.80	55.75	79.80	88.01	96.21	112.61	112.61	112.61	112.61	112.61	112.61	112.61	112.61	112.61	112.61	112.61	112.61	112.61
Total Programme Benefits		0.00	17.38	37.87	58.86	83.94	93.18	102.42	119.86	120.90	121.93	122.97	122.97	122.97	122.97	122.97	122.97	122.97	122.97	122.97	122.97
Net Benefit Stream		-85.03	-74.30	-98.32	-87.68	-71.32	89.33	98.57	116.01	117.04	118.08	119.11	119.11	119.11	119.11	119.11	119.11	119.11	119.11	119.11	119.11

NPV	215.71
IRR	17.1%
NPV Benefits	685.80
NPV Costs	470.09
BCR	1.46
Switching value Costs	1.48
Switching value Maintenance	12.86
Switching value Benefits	0.69

Table 5-17 KIWMP Economic Cost Benefit Analysis, US$ m

Comp	Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
	Programme costs																				
1	Programme Coordination and Management	7.38	6.79	2.90	2.86	2.76															
2	Wetlands Management Programme	4.20	4.59	7.70	6.65	6.78	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99
3	Watershed Management Programme	47.93	61.75	102.58	112.90	121.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Programme Capacity Building and Policy Development	0.58	0.95	1.24	1.41	0.74															
	Total Programme Costs	60.08	74.08	114.42	123.82	131.29	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99
	Programme Benefits																				
2&3	Wetlands Management Programme	0.00	0.00	2.07	3.11	4.14	5.18	6.21	7.25	8.28	9.32	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35
2	Watershed Management Programme	0.00	21.72	43.03	66.60	94.27	102.47	110.67	127.08	127.08	127.08	127.08	127.08	127.08	127.08	127.08	127.08	127.08	127.08	127.08	127.08
Total Programme Benefits		0.00	21.72	45.10	69.71	98.41	107.65	116.89	134.33	135.36	136.40	137.43	137.43	137.43	137.43	137.43	137.43	137.43	137.43	137.43	137.43
Net Benefit Stream		-60.08	-52.36	-69.32	-54.11	-32.88	104.66	113.89	131.33	132.37	133.40	134.44	134.44	134.44	134.44	134.44	134.44	134.44	134.44	134.44	134.44

NPV	397.50
IRR	25.8%
NPV Benefits	779.53
NPV Costs	382.03
BCR	2.04
Switching value Costs	2.08
Switching value Maintenance	29.12
Switching value Benefits	0.49

A final point of interest is the distribution of costs and benefits to riparian states, compared to their present physical and economic stake in the sub basin. A full CBA of costs and benefits by state has not been carried out. Instead a summary of programme costs and benefits by country is given in Table 5-18, together with the percentage shares of sub basin area, population and RGDP Since the costs reflect stakeholder priorities when the project mix was selected no further comment is necessary, other than to note that while Burundi incurs 50% of programme costs it apparently gets only 39% of benefits. This is because costs were estimated according to the country in which they will be incurred, while benefits were estimated by sub watershed and subsequently divided between countries according to their area share of each. Akanyaru sub watershed for example is 62% in Burundi and 38% in Rwanda, so the benefits from project number B1, the costs of which are attributed entirely to Burundi, are shared between Burundi and Rwanda in the same ratio.

Table 5-18 Share of Financial Costs and Economic Benefits of KIWMP

Riparian State	Financial Costs US$ m			Economic Benefits US$ m			Share of KIWMP and Kagera Sub basin				
	WMP	WSM	Total	WMP	WSM	Total	Costs	Benefits	Area	Population	RGDP
Burundi	2.71	273.46	276.17	0.80	52.23	53.02	50%	39%	23%	33%	6%
Rwanda	1.89	114.32	116.21	3.70	39.47	43.18	21%	32%	36%	54%	83%
Tanzania	4.08	81.23	85.31	2.23	24.89	27.12	15%	20%	34%	9%	7%
Uganda	15.72	63.98	79.70	1.60	11.60	13.20	14%	10%	7%	4%	4%
Total	24.39	533.00	557.39	8.33	128.20	136.52	100%	100%	100%	100%	100%

Note: Costs and Benefits of Components 1,3 and 4 are excluded

The KIWMP CBA should be taken as an indication of the potential of the programme, not a predication of performance. The administrative complexities of programme start-up and the necessity to prepare further some of the projects for financing will inevitably delay implementation and reduce cross-project synergies. Nevertheless, the practical problems of implementation should not prejudice the attempt to attain the important economic benefits that the programme can bring to the Kagera sub basin.

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