Irrigation and Food Security

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Introduction……

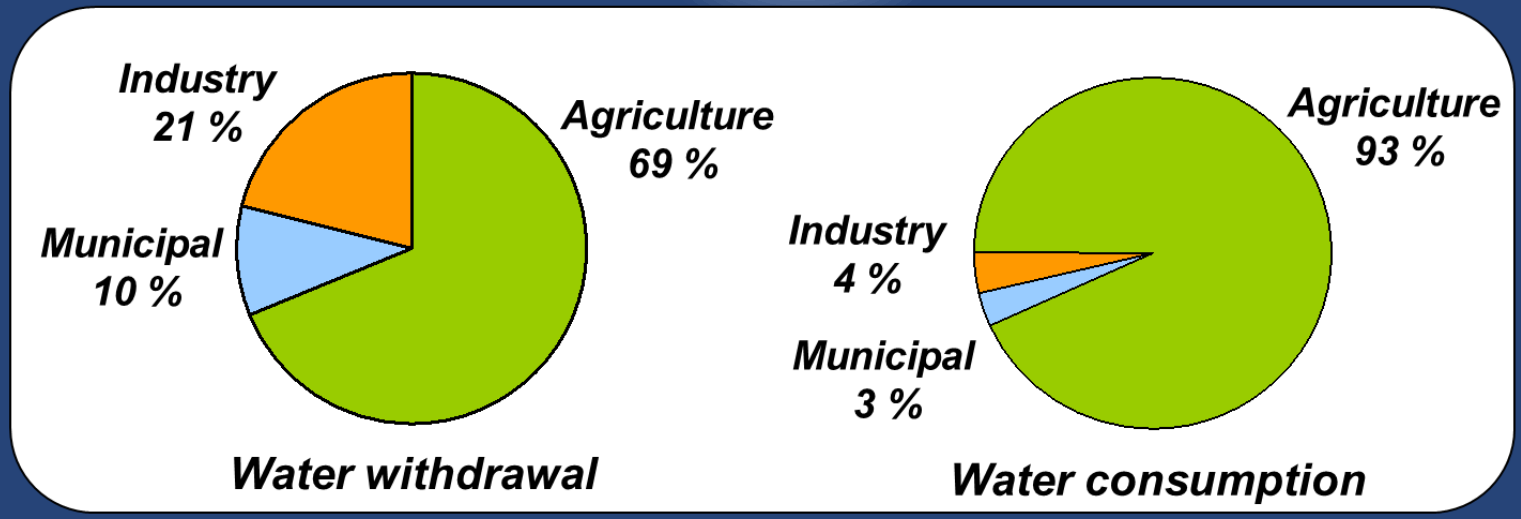
- **Food security:** exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life.

- **Food insecurity:** exists when people do not have adequate physical, social or economic access to food as defined above.

- **Main Causes of food Insecurity**: ***Climate change*** (Drought and other extreme weather events) and Conflicts.

Water use and food production……

- About 50% of accessible water resources are currently mobilized for human use;
- Agriculture represents 95% of all water use (85 to 95% in developing countries) but are the largest consumer;
- Irrigation represents less than 20% of cultivated land but contributes 40% to overall food production.



Water use and food production.....

1 tomato

13 litres

1 cup of coffee

140 litres

1 glass of orange juice

170 litres

1 apple

70 litres

1 egg

135 litres

1 bag of potato crisps

185 litres

1 hamburger

2400 litres

1 glass of wine

120 litres

1 glass of beer

75 litres

1 glass of apple juice

190 litres

1 glass of milk

200 litres

Produced by the Water Unit of the Food and Agriculture Organization of the United Nations. http://www.fao.org/nr/water

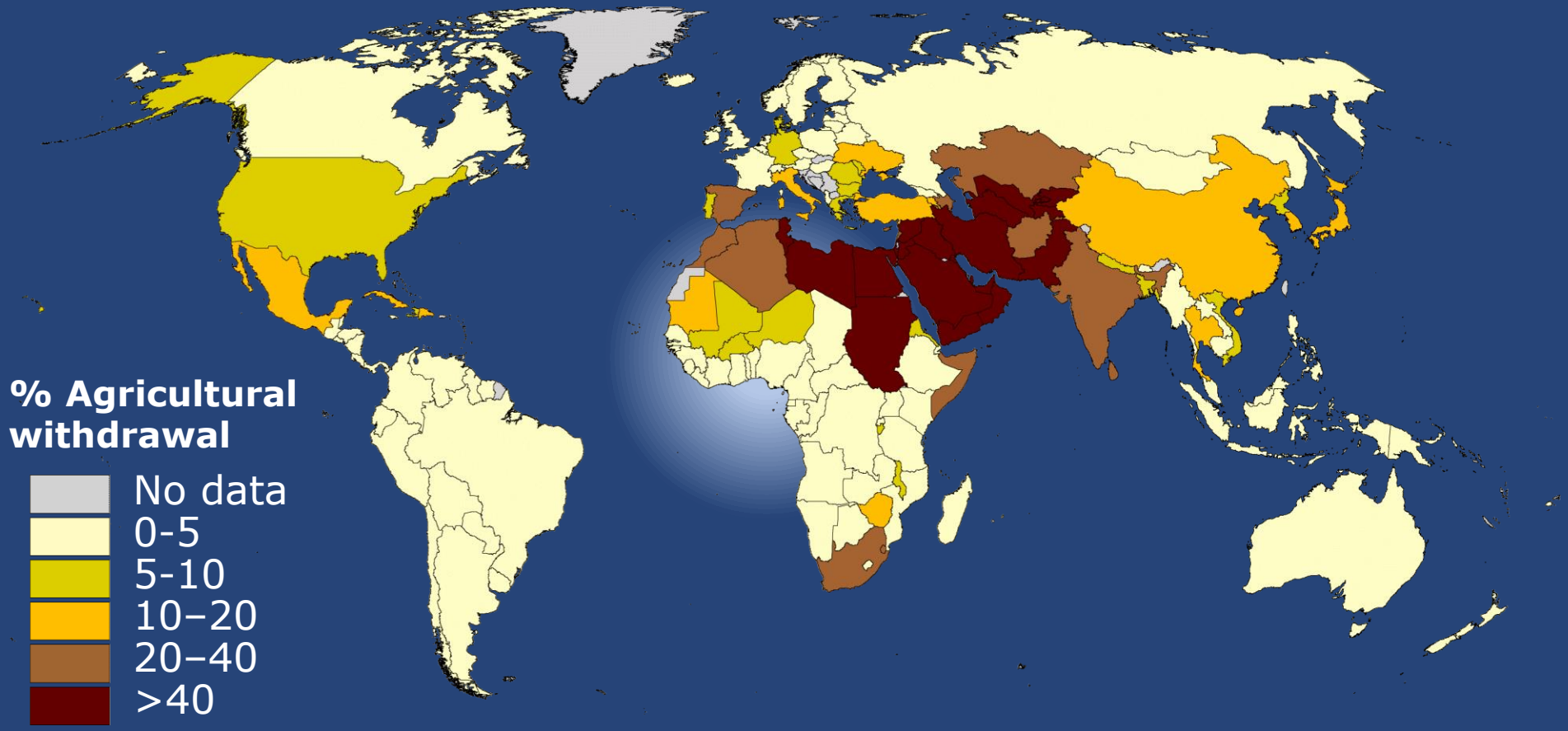
Strategic framework……

- As per **the 2030 Agenda (SDGs),** there is an urgent need to unify the different aspirations such as water-use efficiency (SDG 6.4), increase agricultural productivity and incomes of smallholder farmers (SDG 2.3) and elimination of all kinds of malnutrition (SDG 2.2).
- **UNDAP Output 1.1:** Institutions and communities, especially small scale farmers, rural youth and women in target areas have the requisite technical capacities and inputs for innovative and sustainable agriculture production and productivity.

Strategic framework.....

- **PSTA4: Ia 2.2** Effective And Efficient Irrigation Under IWRM Frameworks: While developing irrigation is a priority, the irrigation systems need to be efficient and sustainable, both in terms of its provision of water resources as well as the development and management of the irrigation systems.
- **Irrigation Master Plan (2012):** is keen to transform the promise offered by modern irrigation technology from potential into reality in its pursuit of food security

Freshwater withdrawal for Agriculture.....



Map showing agricultural water withdrawal as percentage of renewable water resource in 1998 by country, where withdrawals for agriculture are critically high (category 5) and indicative of water stress (category 4).

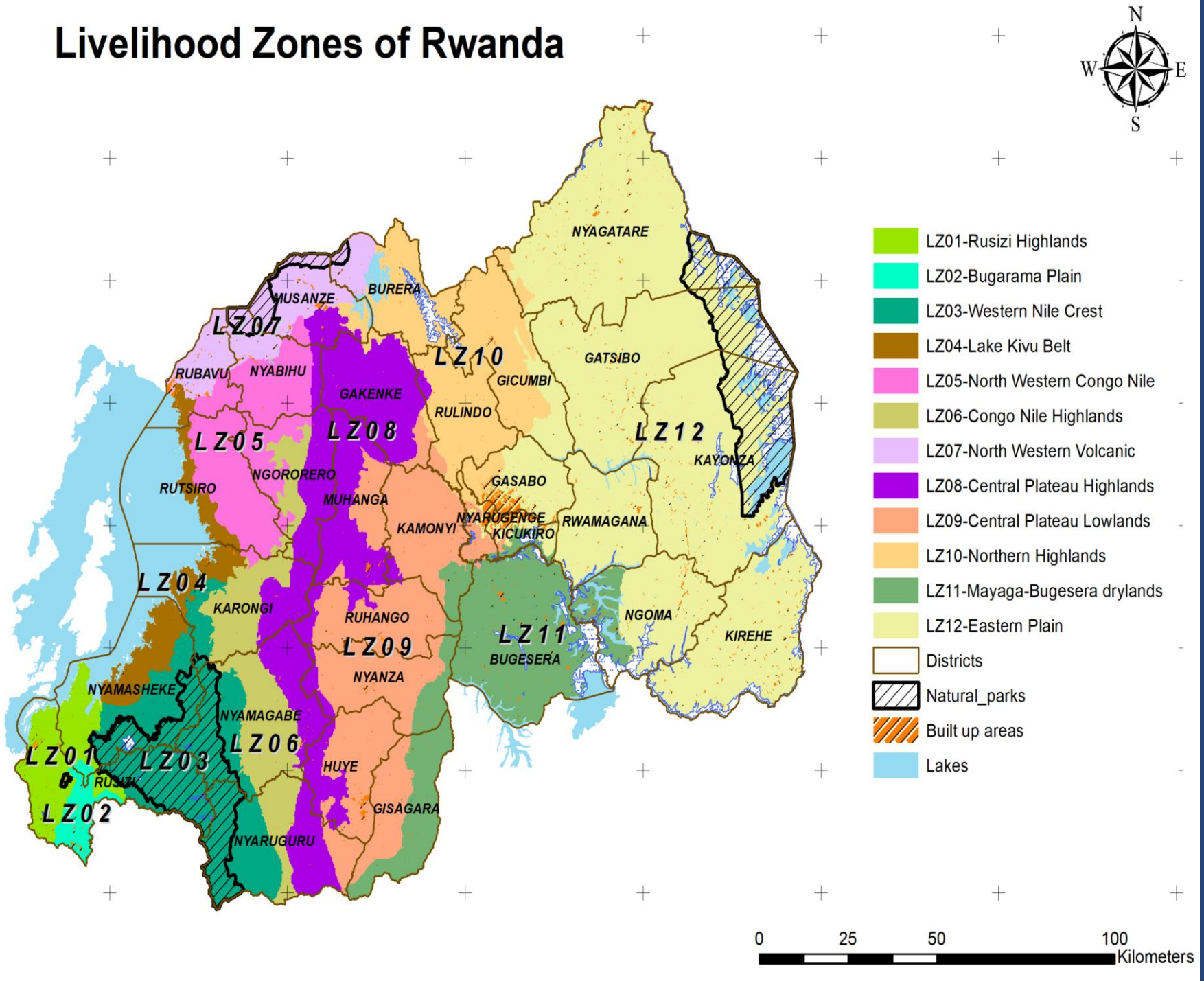
Irrigation efficiency and withdrawal .....

FAO estimates (for 93 developing countries) that in 2030:
- Irrigation efficiency is expected to improve from 38 to 42 %
- water withdrawal is expected to grow by about 14 percent

	sub-Saharan Africa	Latin America	Near East/ North Africa	South Asia	East Asia	93 developing countries
Irrigation efficiency (%)						
1998	33	25	40	44	33	38
2030	37	25	53	49	34	42
Irrigation water withdrawals as a percentage of renewable water resources						
1998	2	1	53	36	8	8
2030	3	2	58	41	8	9

No Agriculture and food without Water……

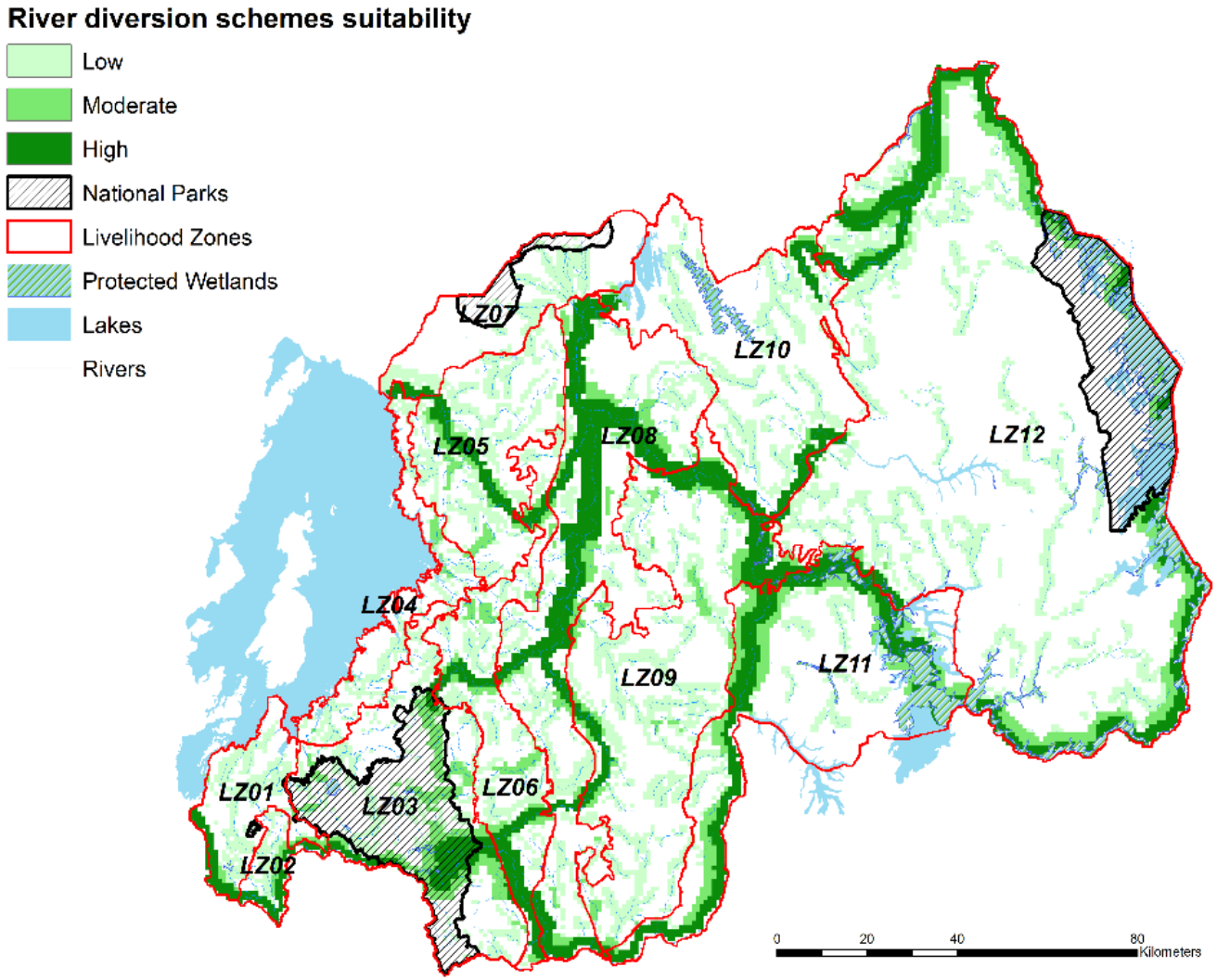
New approaches in agricultural water management



Contribution of FAO to AWM in Rwanda……

The livelihood zone map was developed based mainly on the physiographical information

RIVER DIVERSION SCHEMES



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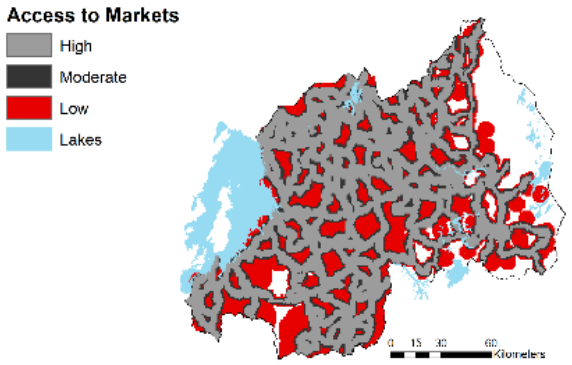
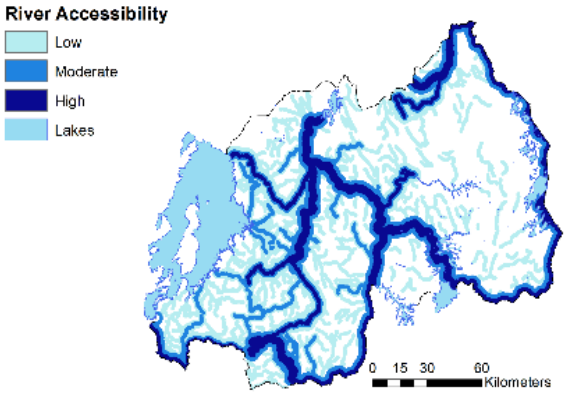
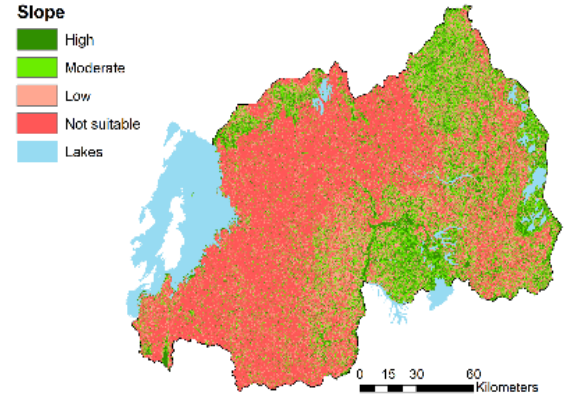
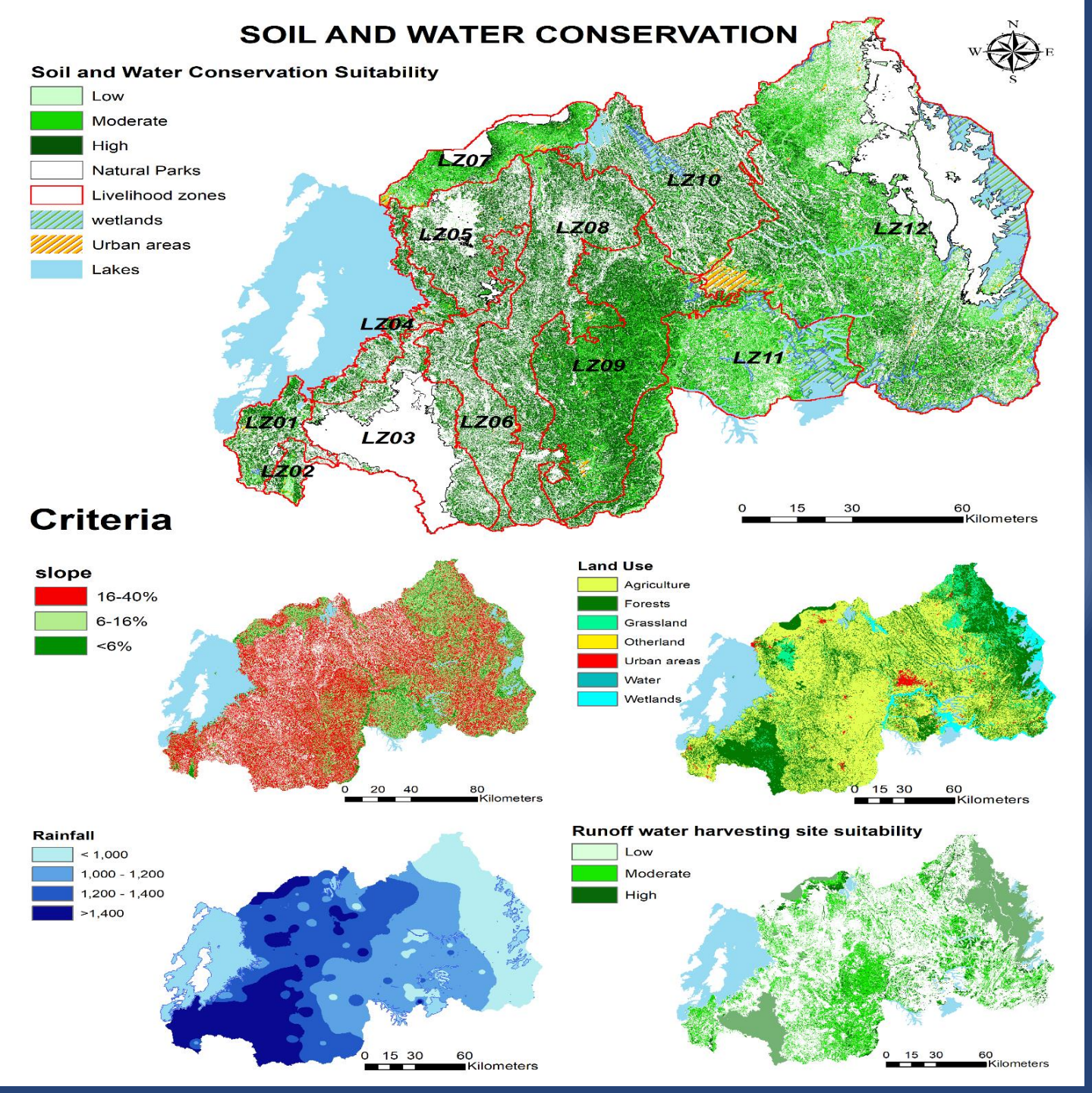






Types Technologies and their suitability……

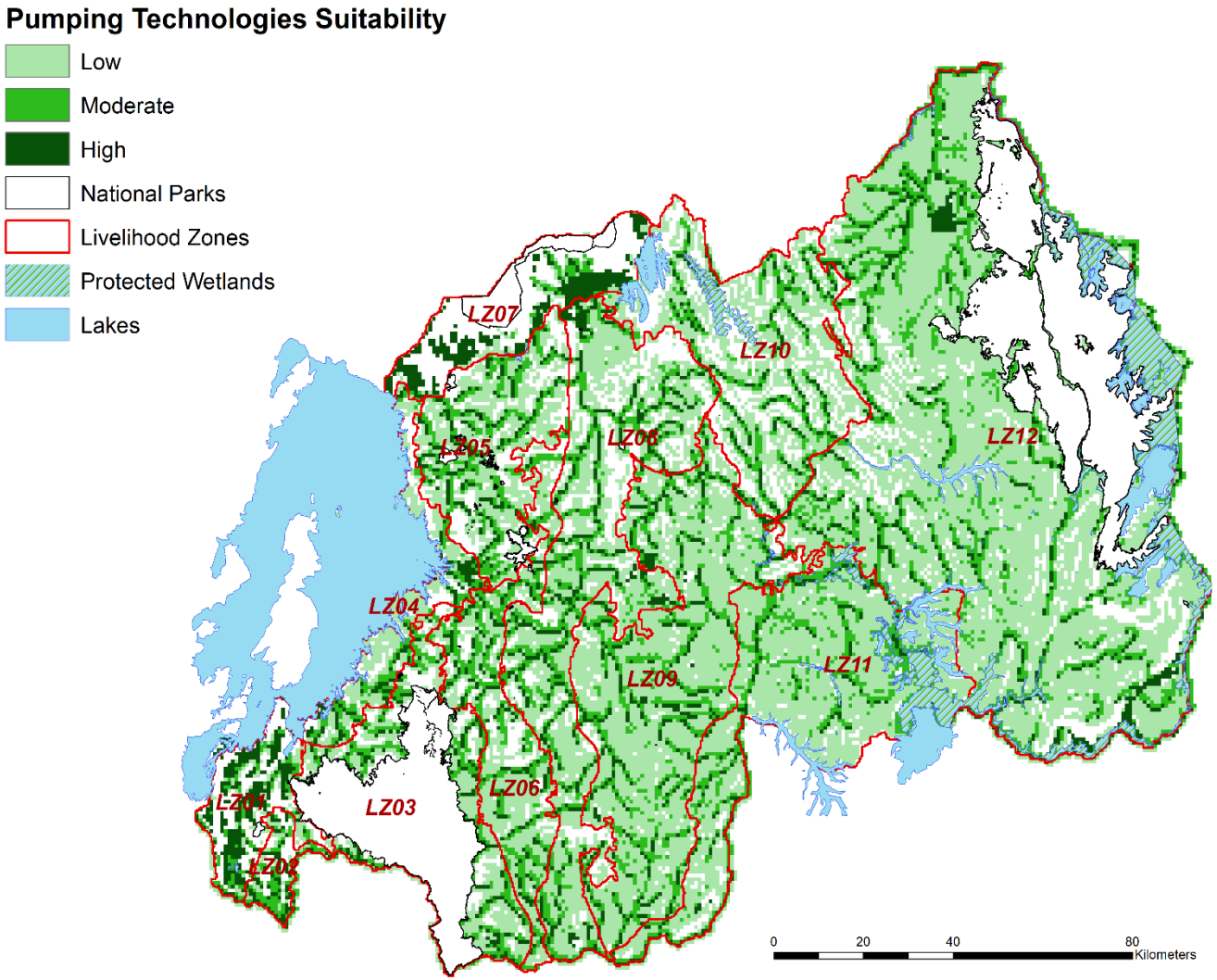
River Diversion



Types Technologies and their suitability……

Soil and Water conservation

PUMPING TECHNOLOGIES



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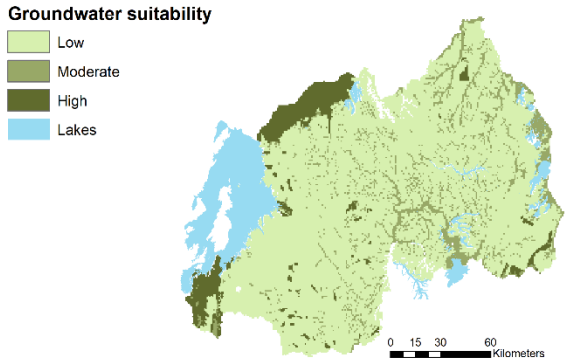

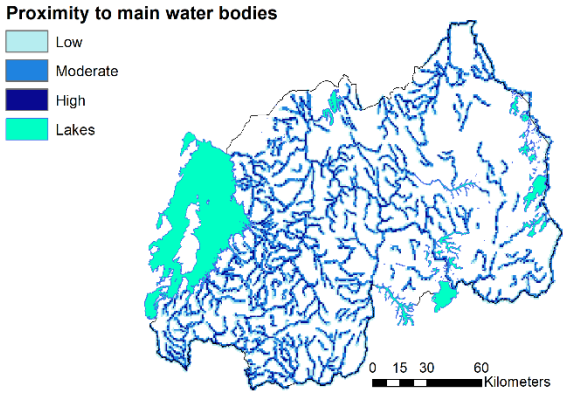

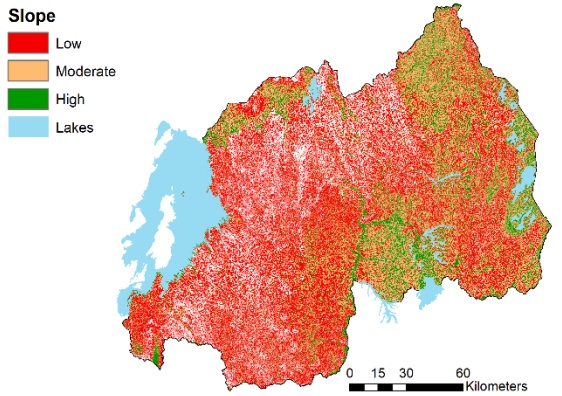

Contribution of FAO to AWM in Rwanda……

Pumping technologies

No Agriculture without Water……

Pro-poor and affordable agriculture water management ***(Leaving no one behind)***

Role of water for poverty alleviation to wards food security……

- Raise food supply and cash income
- Reduced migration from rural areas to cities
- Irrigation allows for timely, secure increase in production without increasing the land holding
- Conditions
  - Affordable technologies
  - Local manufacturing capacity
  - Land, water and technology under farmer control
  - low operation and maintenance costs
  - Easy to install and to operate

FAO – Rwanda’s Case


Thank You!