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WATER RESOURCES ISSUES IN THE ESCWA REGION

COUNTRY FACT SHEETS



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United Nations Economic and Social Commission for Western Asia





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INTRODUCTION

Scarce water resources are one of the defining features of the Economic and Social Commission for Western Asia (ESCWA) region. The high population growth rates have reduced the per capita supply of freshwater in every ESCWA country, hindering efforts aimed at alleviating poverty and promoting sustainable development. The emerging change in climatic conditions places additional stress on limited resources.

As conventional water resources have become insufficient to meet demand, ESCWA countries have increasingly turned to non-conventional water resources to fill the gap. Non-conventional water resources in ESCWA countries consist primarily of desalinated water and the use of treated wastewater.

The purpose of these Country Fact Sheets is to examine the water situation in the region, with particular emphasis on the desalination industry as a growing source of freshwater in many of the ESCWA countries. The Fact Sheets examine the trend in population growth, freshwater availability, and water use, highlighting the consumption trends of the most water-intensive sectors in each country. The desalination of each country is presented in terms of quantity produced, type of technology and type of feedwater used, and provides the predicted future desalination volume.

ABBREVIATIONS

bcm/d: billion cubic meters per day
GDP: gross domestic product
m³/d: cubic meters per day
m³/p/yr: cubic meters per person per year
mcm/d: million cubic meters per day
MED: multiple effect distillation
MSF: multi- stage flushing
RO: reverse osmosis

DEFINITIONS

Agriculture share of gross domestic product (GDP):

Definition: The aggregation of economic activities of Section A (agriculture, hunting and forestry) and Section B (fishing), expressed as a share in GDP for the year 2007, except for Egypt, Saudi Arabia, Sudan and United Arab Emirates, whose figure is for the year 2006.

Source: National Accounts Estimates of Main Aggregates, United Nations Statistics Division (UNSD), available at: <http://data.un.org/Default.aspx>.

Agriculture water withdrawal as percentage of total renewable water resources

Definition: The water withdrawn for irrigation expressed as a percentage of the total actual renewable water resources for various years. This parameter is an indication of the pressure on the renewable water resources caused by agriculture activities.

Source: AQUASTAT, available at:

<http://www.fao.org/nr/water/aquastat/data/query/index.html>.

Dependency ratio (in per cent)

Definition: The per cent of renewable water resources originating outside the country. This indicator theoretically varies between 0 per cent and 100 per cent. A country with a dependency ratio of 0 per cent does not receive any water from neighboring countries. A country with a dependency ratio of 100 per cent receives all its renewable water from upstream countries, without producing any of its own.

Source: AQUASTAT, available at:

<http://www.fao.org/nr/water/aquastat/data/query/index.html>.

Desalination capacity

Definition: Expressed in cubic meters per day (m³/d) is the water desalinated daily for the year 2008.

Source: Desaldata database accessed during June 2009 and available at:

<http://Desaldata.com>.

Desalination capacity growth forecast

Definition: Expressed in million cubic meters per day (mcm/d) is the expected amount of water desalinated for 2006-2010- and 2011-2015-.

Source: Global Water Intelligence (GWI), 2007; Desalination Markets 2007: A Global Forecast.

Desalination feedwater type

Definition: Is the type of water desalinated which can be seawater, river water, wastewater, brackish water or other types of water/not identified type of desalted water.

Source: Desaldata database accessed during June 2009 and available at:

<http://Desaldata.com>.

Desalination technology used:

Definition: Is the type of technology used for desalting water which can include multi-stage flushing (MSF), multiple effect distillation (MED), reverse osmosis (RO) and other types that include electrodialysis (ED) and vapor compression (VC).

Source: Desaldata database accessed during June 2009 and available at:

<http://Desaldata.com>.

Freshwater withdrawal as percentage of total renewable water resources:

Definition: Is the total freshwater withdrawn, expressed as a percentage of the internal renewable water resources for various years. It is an indication of the pressure on the internal renewable freshwater resources.

Source: AQUASTAT, available at:

<http://www.fao.org/nr/water/aquastat/data/query/index.html>.

GDP/capita

Definition: Is the GDP calculated as the aggregate of production divided by the population size for the year 2007, except for Egypt, Saudi Arabia, Sudan and United Arab Emirates whose figure is for the year 2006.

Source: National Accounts Estimates of Main Aggregates, UNSD, available at:

<http://data.un.org/Default.aspx>.

Improved water supply coverage (in per cent)

Definition: Is the percentage of the total population using improved water sources for the year 2006. An "improved" source is one that is likely to provide «safe» water, such as a household connection, a borehole, etc.

Source: World Health Organization (WHO)/United Nations Children's Fund (UNICEF) Joint Monitoring Programme (JMP) for Water Supply and Sanitation, available at:

<http://www.wssinfo.org/>.

Non-conventional sources of water

Definition: Refers to water that can be available for use without increasing the load on primary renewable freshwater resources. Water can be: 1) desalinated water; 2) adequately treated domestic or industrial wastewater; or 3) agricultural drainage water. Treatment requirements vary by country.

Source: AQUASTAT, available at:

<http://www.fao.org/nr/water/aquastat/data/query/index.html>.

Population

Definition: De facto population in a country, area or region as of 1 July of the year 2007, except for Egypt, Saudi Arabia, Sudan and United Arab Emirates where figure is for year 2006.

Source: Demographic Statistics, UNSD, available on

<http://data.un.org/Default.aspx>.

Population density

Definition: The number of inhabitants per square kilometer of total area.

Source: AQUASTAT, available at:

<http://www.fao.org/nr/water/aquastat/data/query/index.html>.

Population growth rate

Definition: Average exponential rate of growth of the population over a given period. It is calculated as $\ln(P_t/P_0)/t$ where t is the length of the period. It is expressed as a percentage.

Source: The State of the World's Children 2009, UNICEF available at:

<http://data.un.org/Default.aspx>.

Sectoral water withdrawal

Definition: Is the agricultural, municipal and industrial water withdrawal as percentage of total water withdrawal.

Source: AQUASTAT, available at:

<http://www.fao.org/nr/water/aquastat/data/query/index.html>.

Total renewable water resources per capita

Definition: The total annual actual renewable water resources per inhabitant.

Source: AQUASTAT, available at:

<http://www.fao.org/nr/water/aquastat/data/query/index.html>.

Total water use per capita

Definition: Expressed in m³/year per inhabitant, is the total annual amount of water withdrawn per capita.

Source: AQUASTAT, available at:

<http://www.fao.org/nr/water/aquastat/data/query/index.html>.

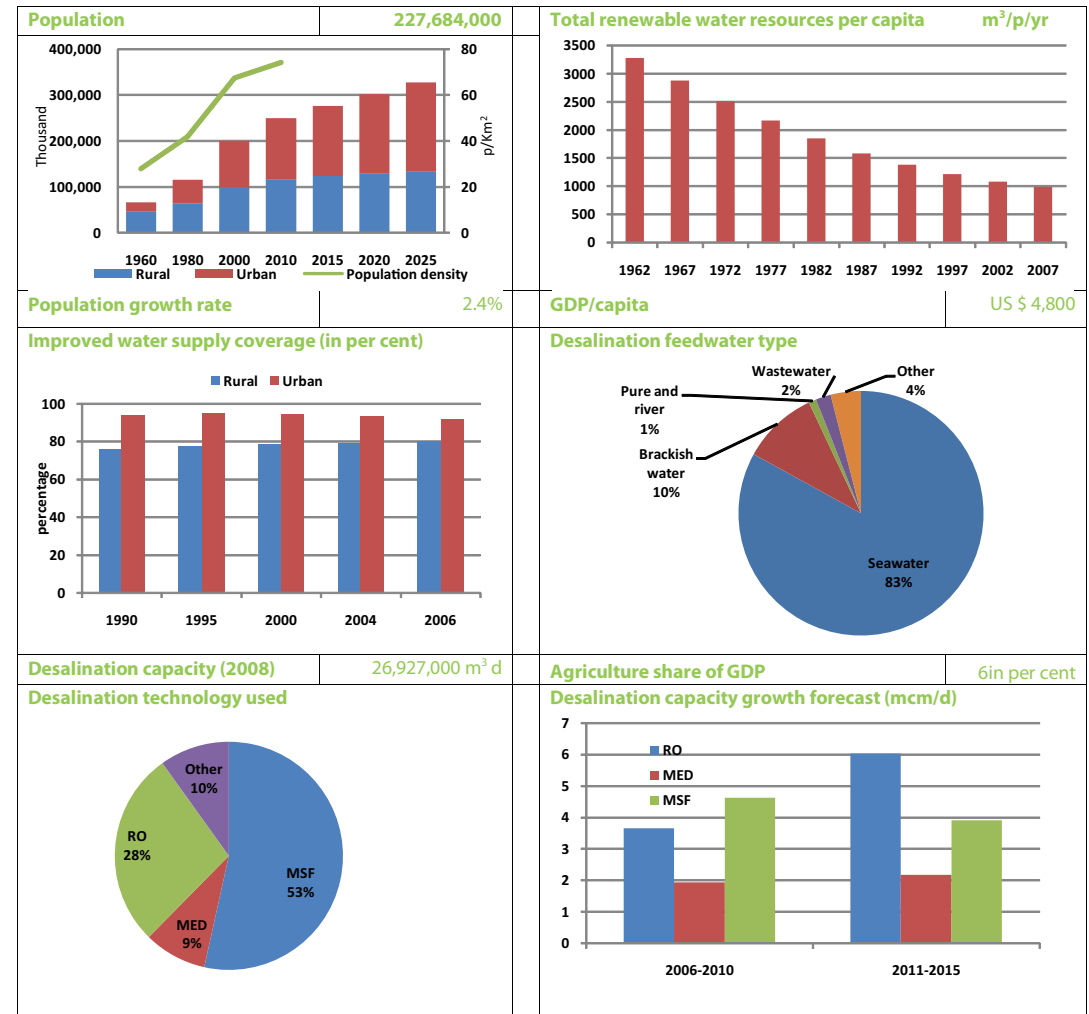
Urban population/ rural population

Definition: Rural population is calculated as the difference between the total population and the urban population.

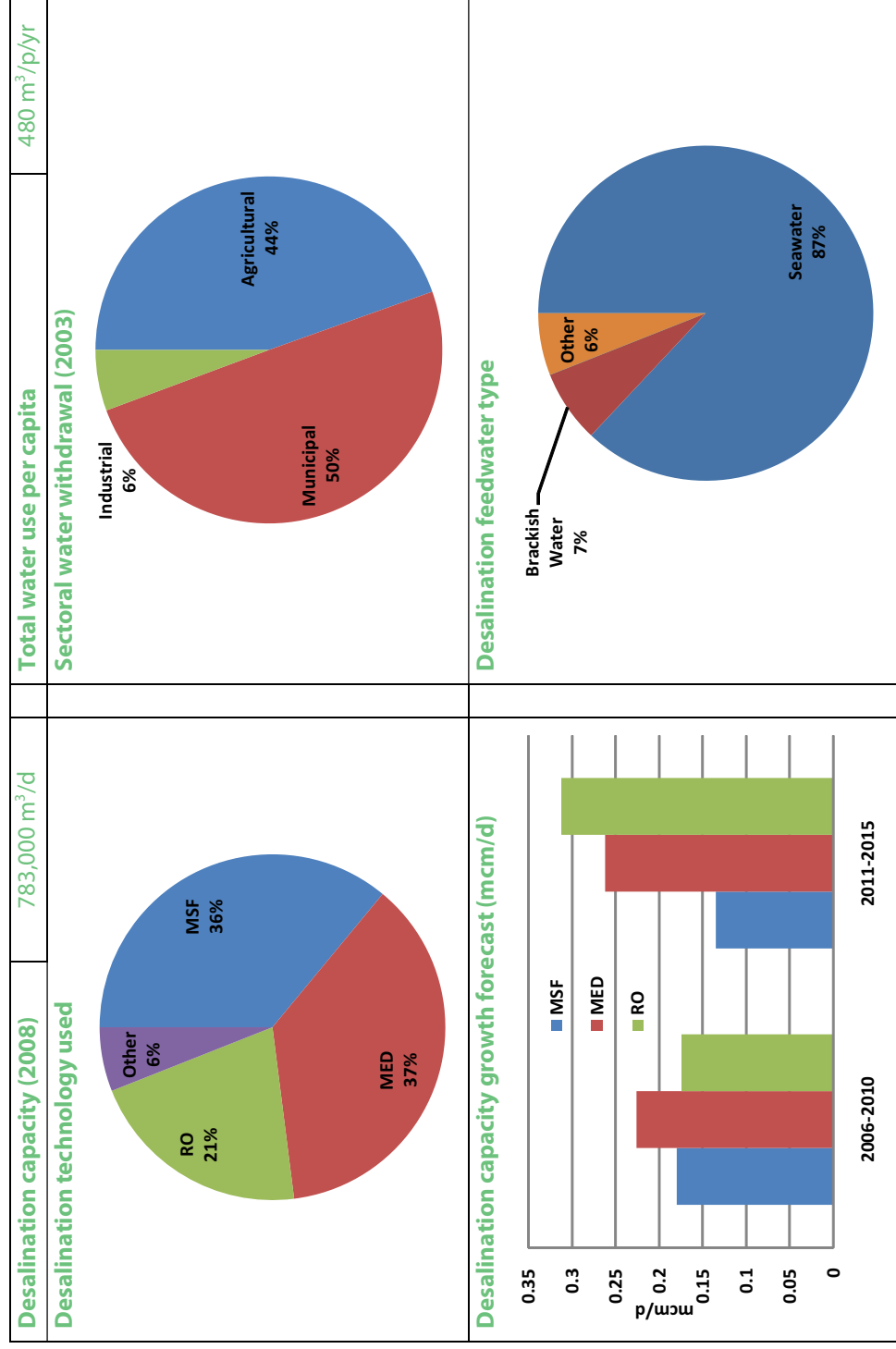
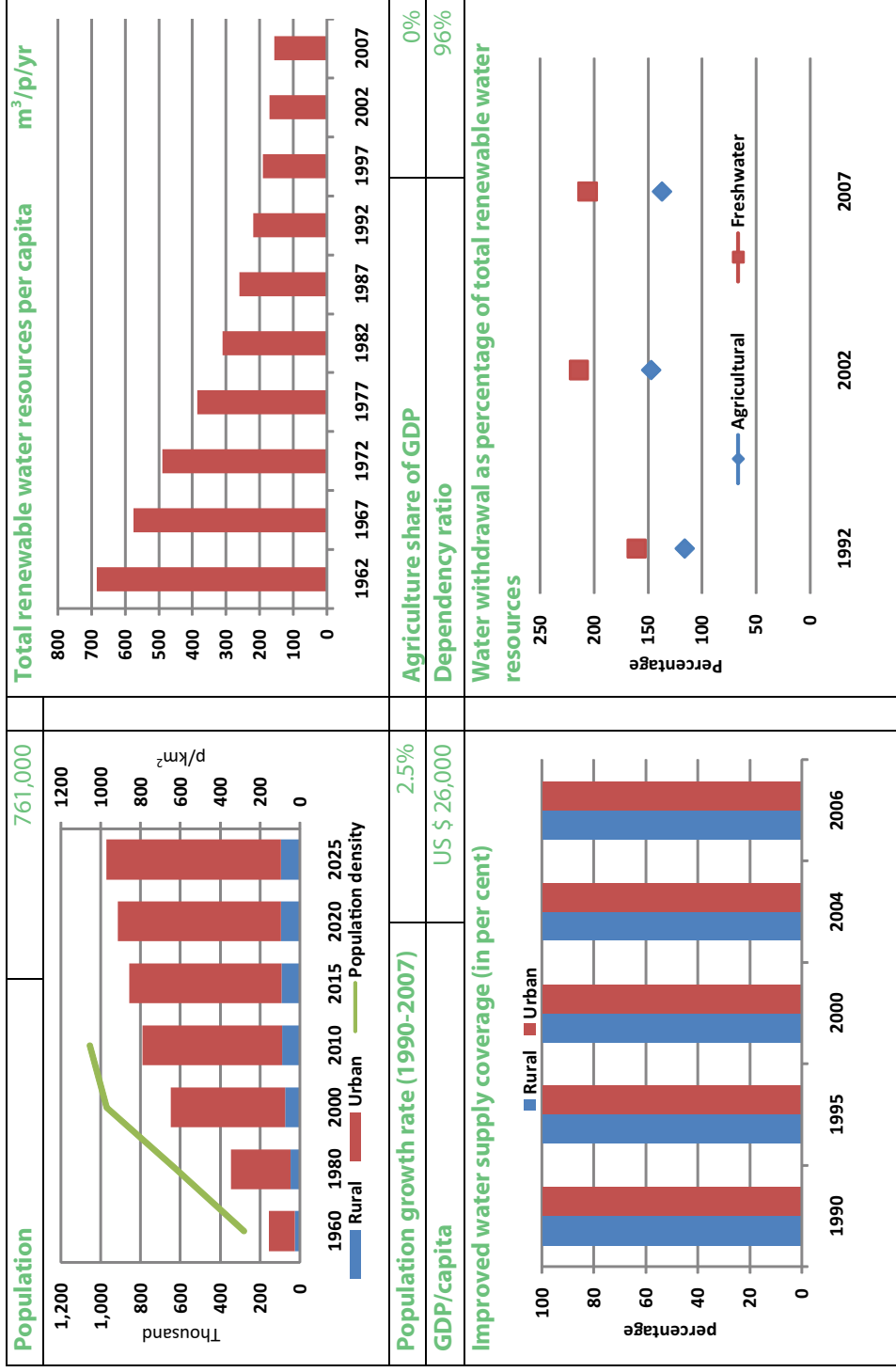
Source: United Nations World Population Prospects; The 2006 Revision and World Urbanization Prospects: The 2007 Revision, available at:

<http://esa.un.org/unup>.

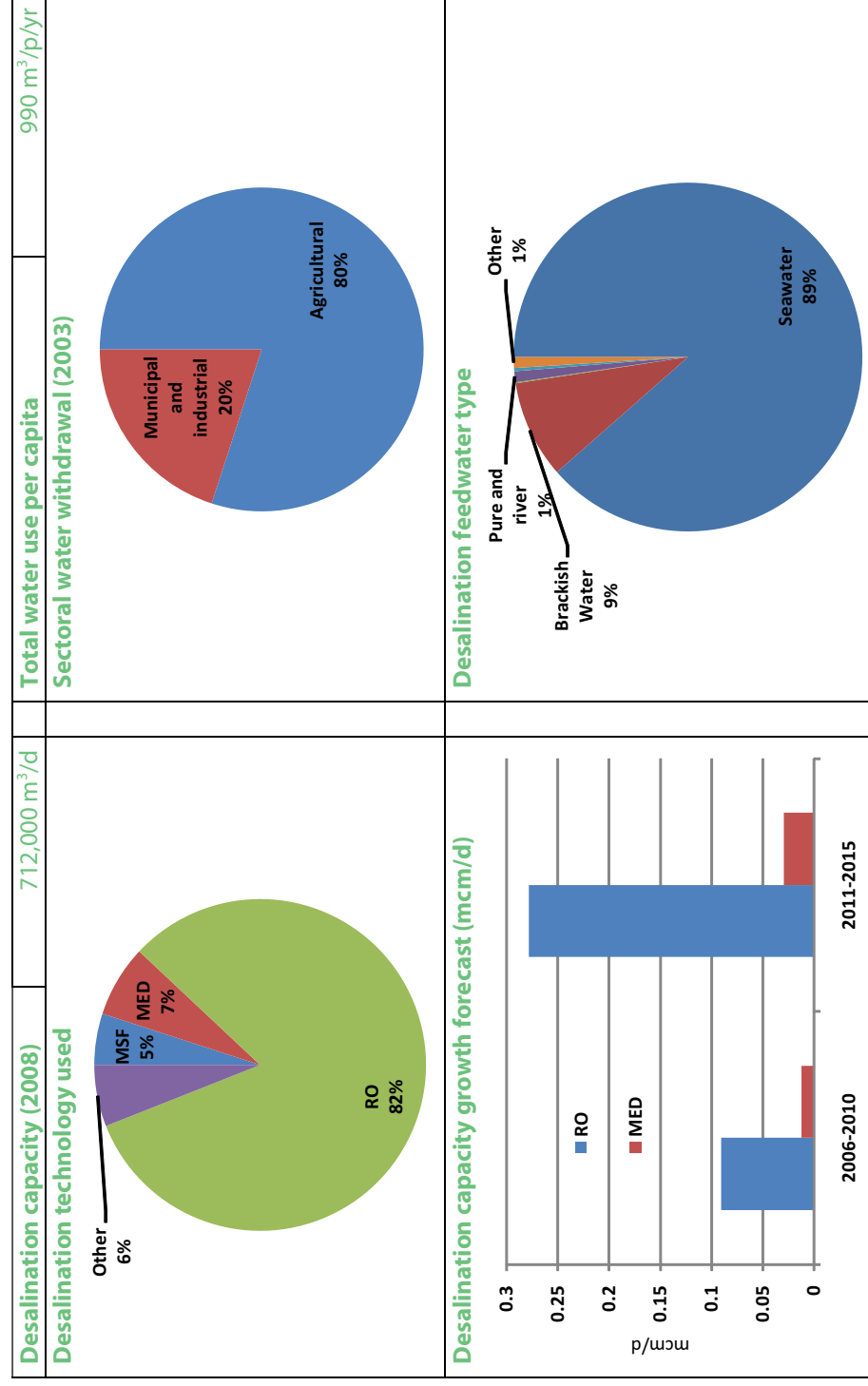
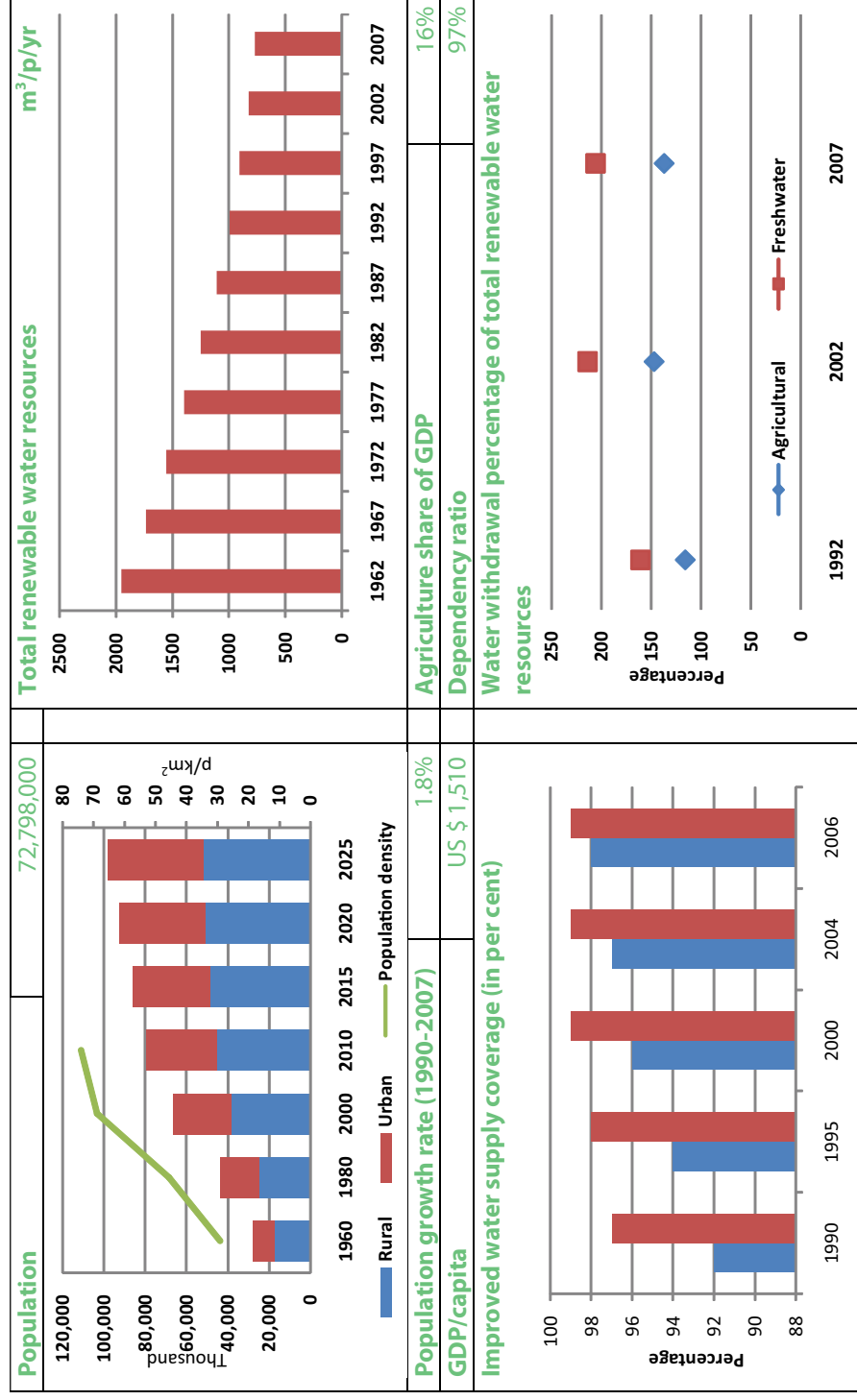
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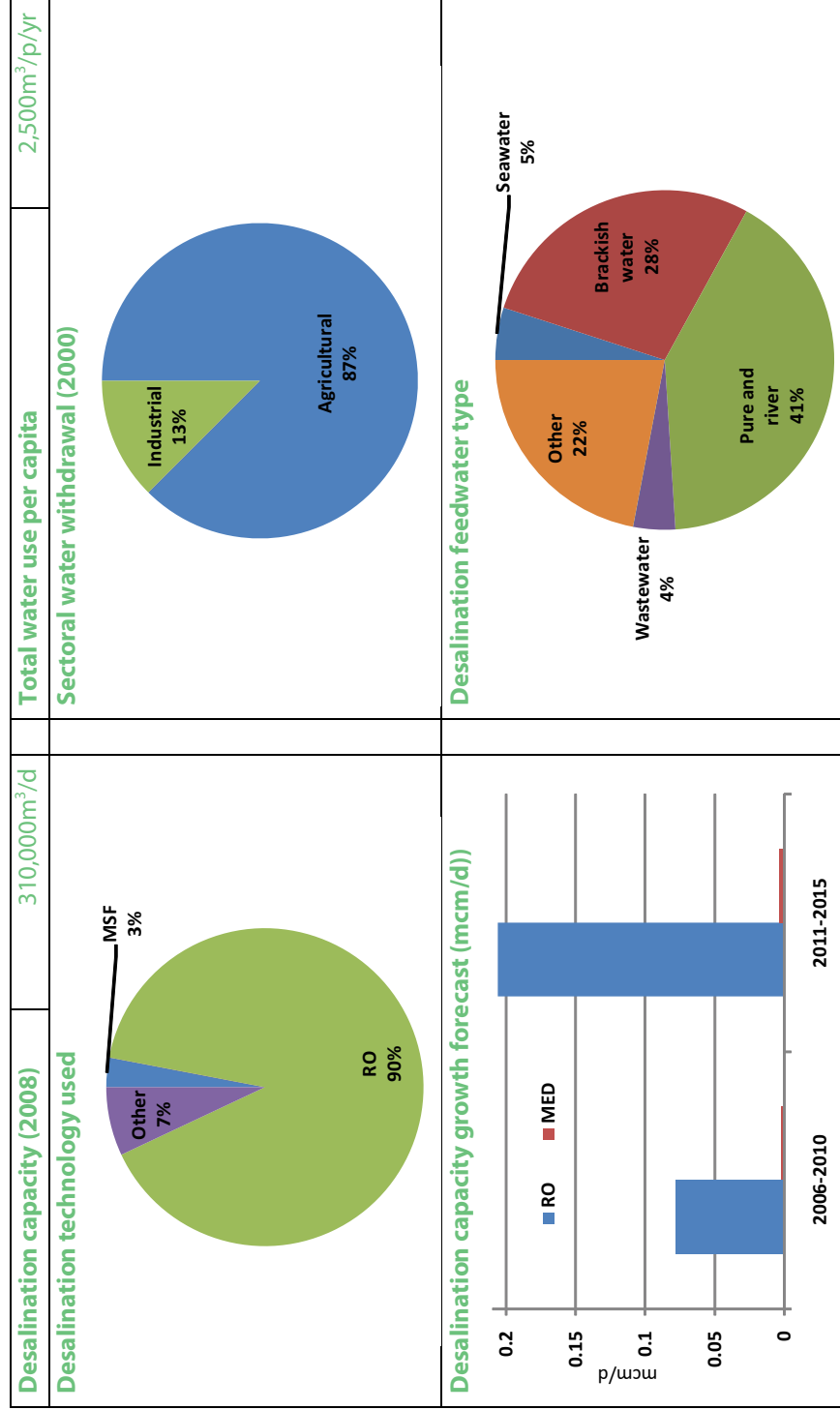
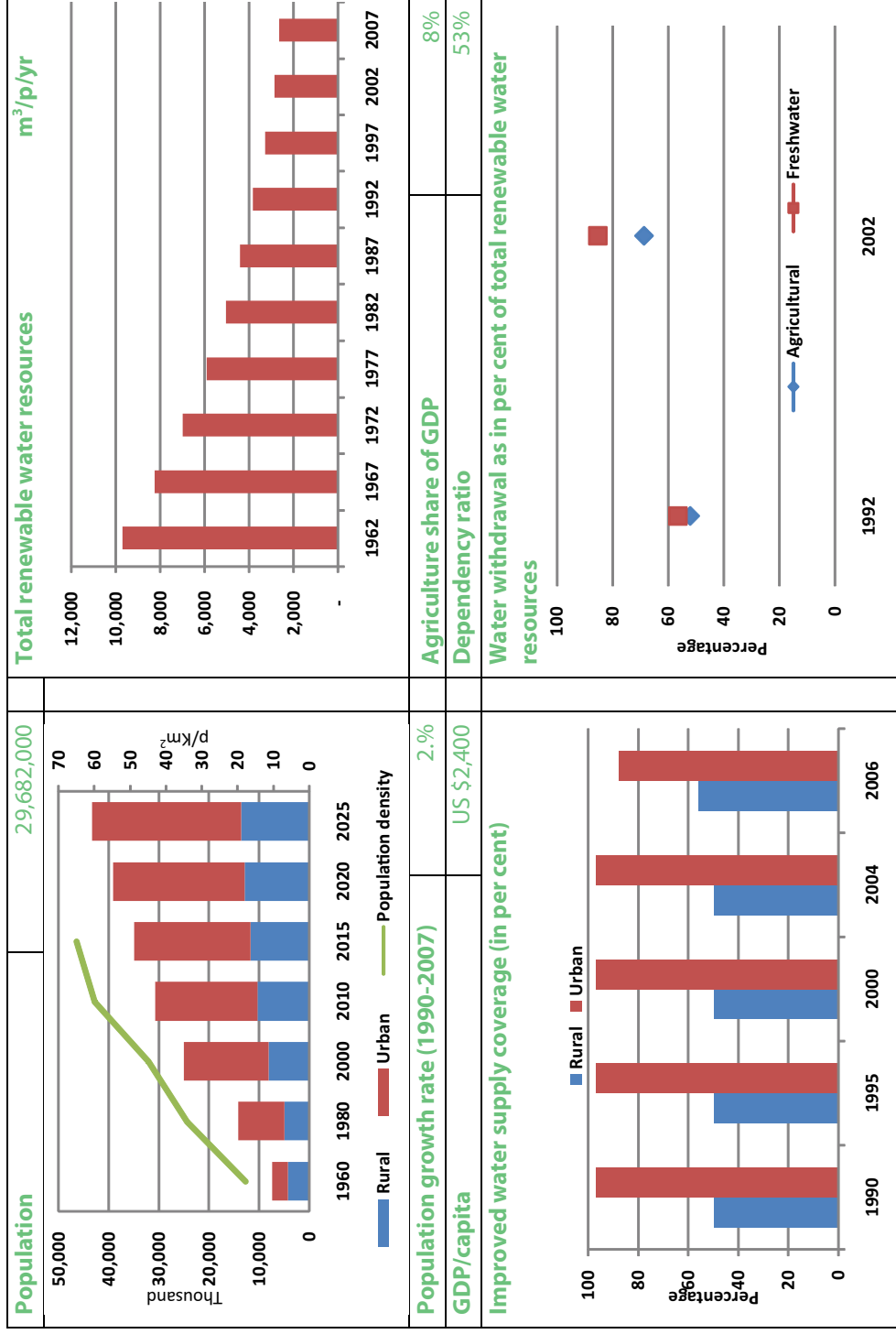


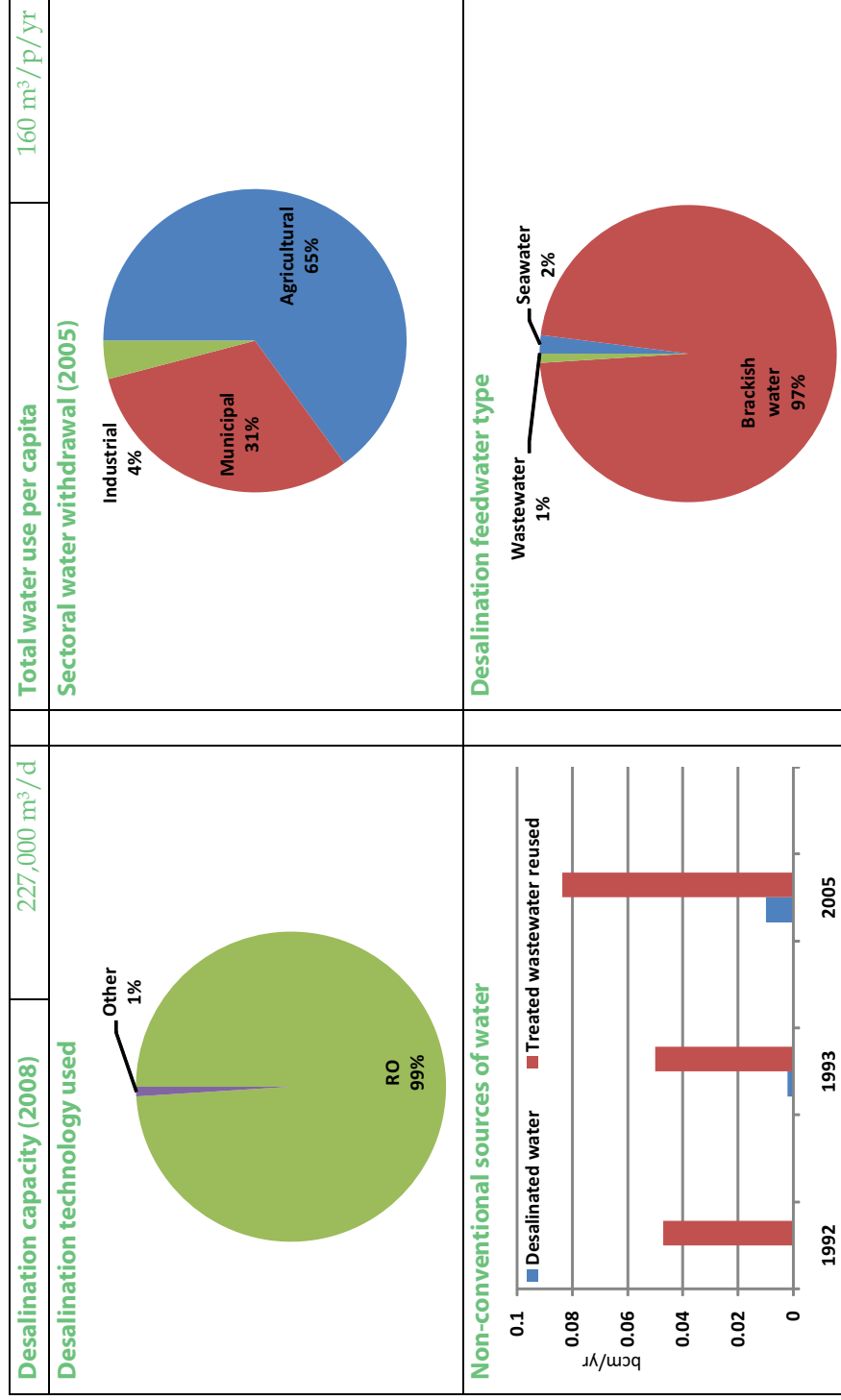
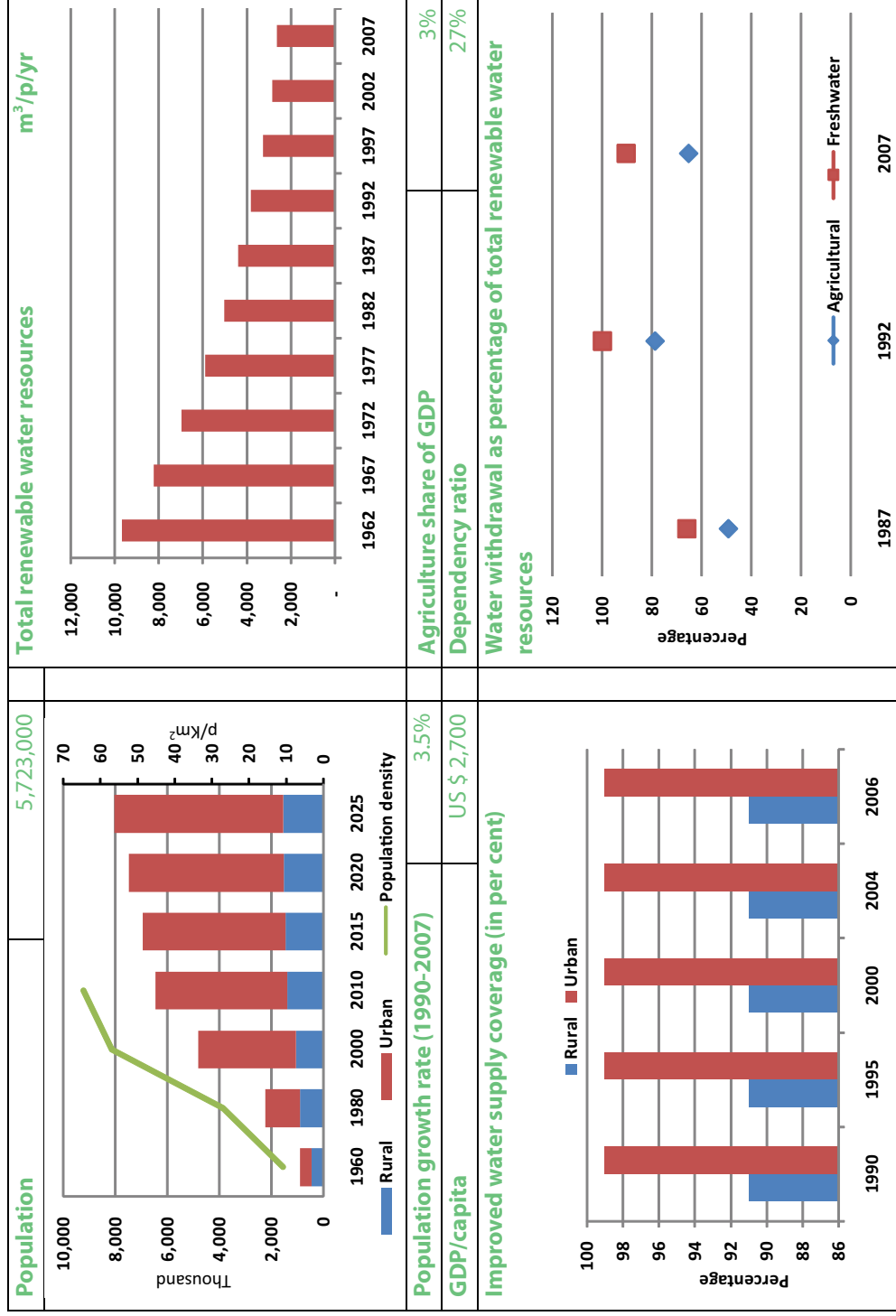
¹Data compiled by ESCWA.

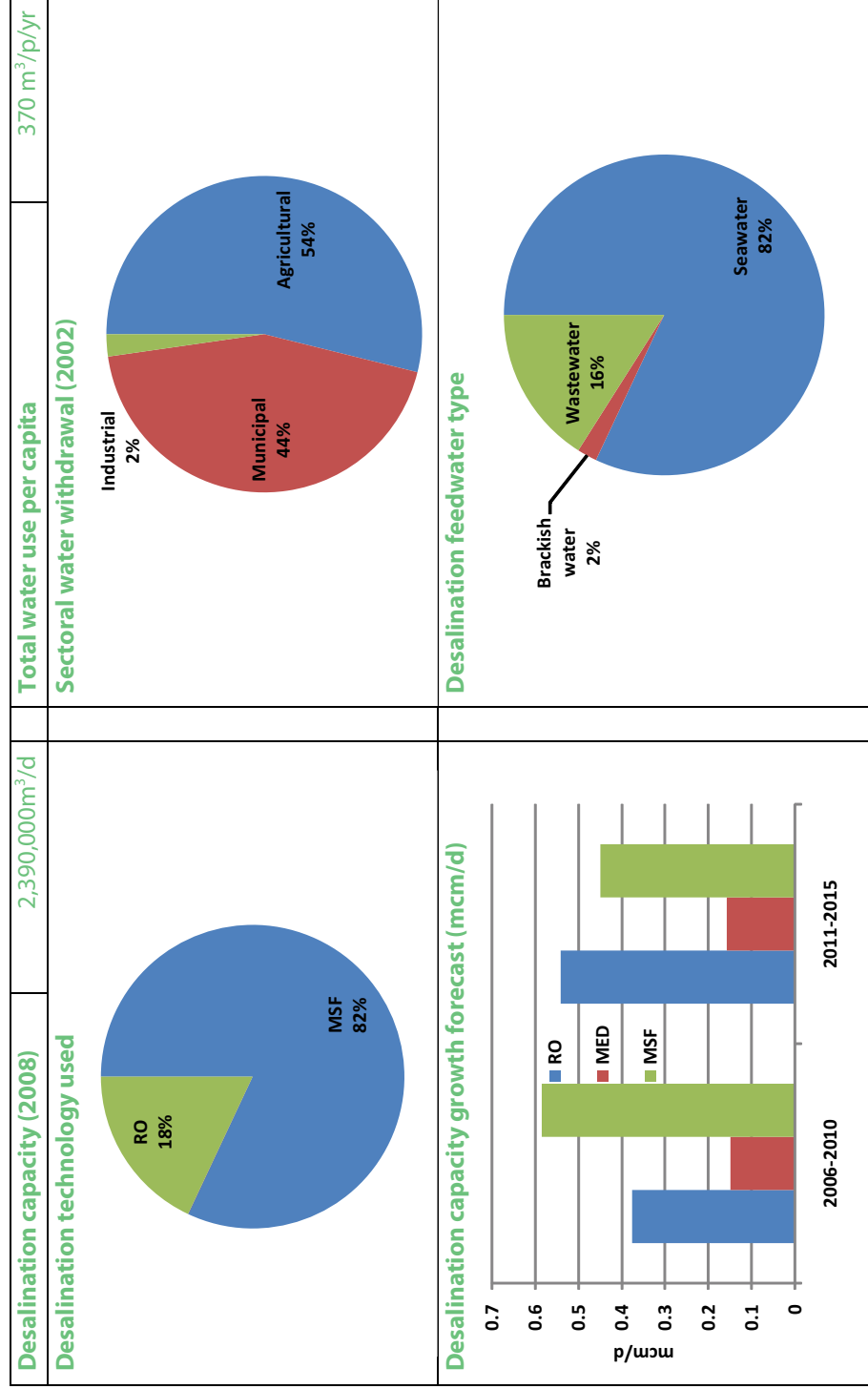
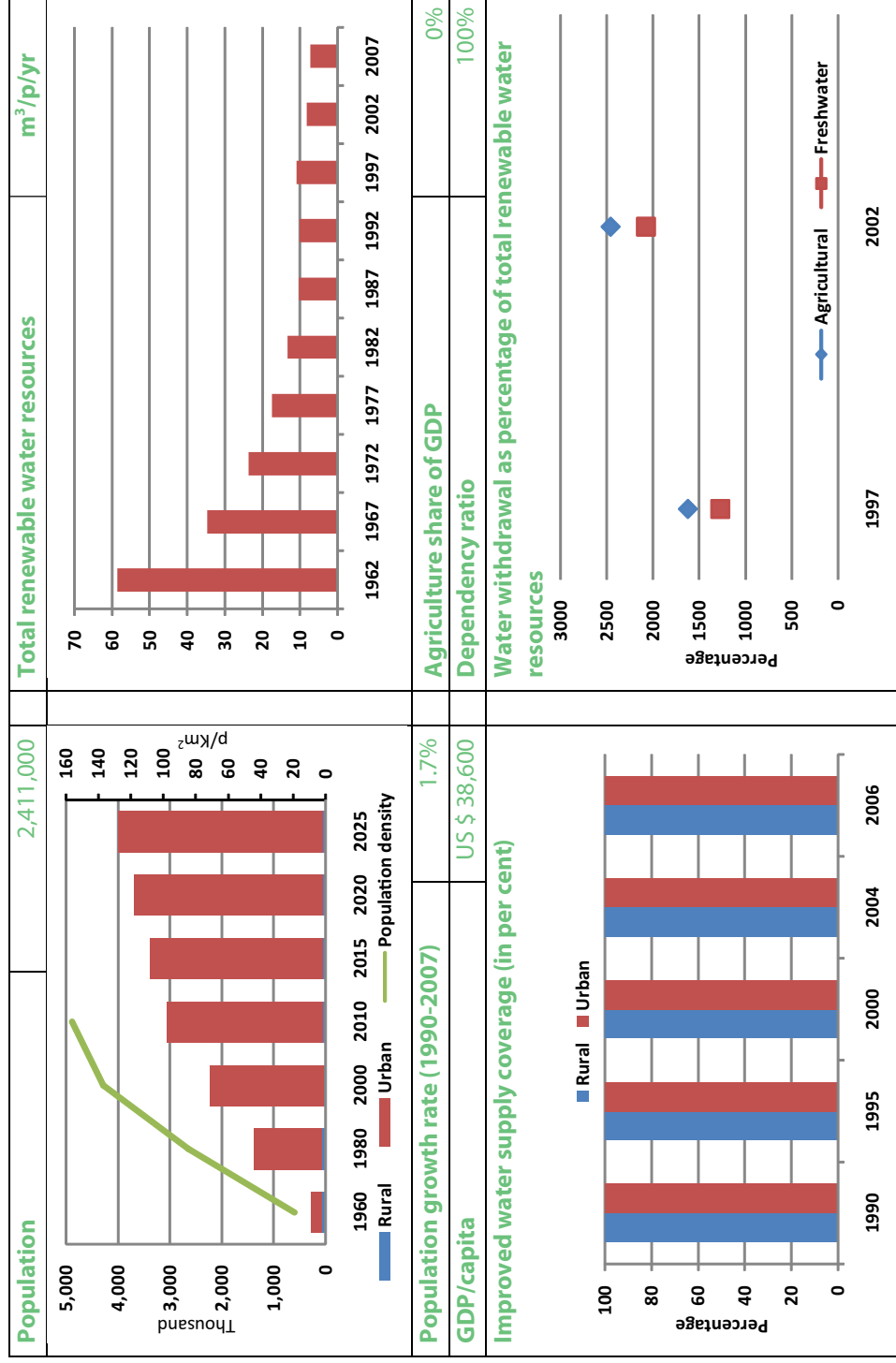


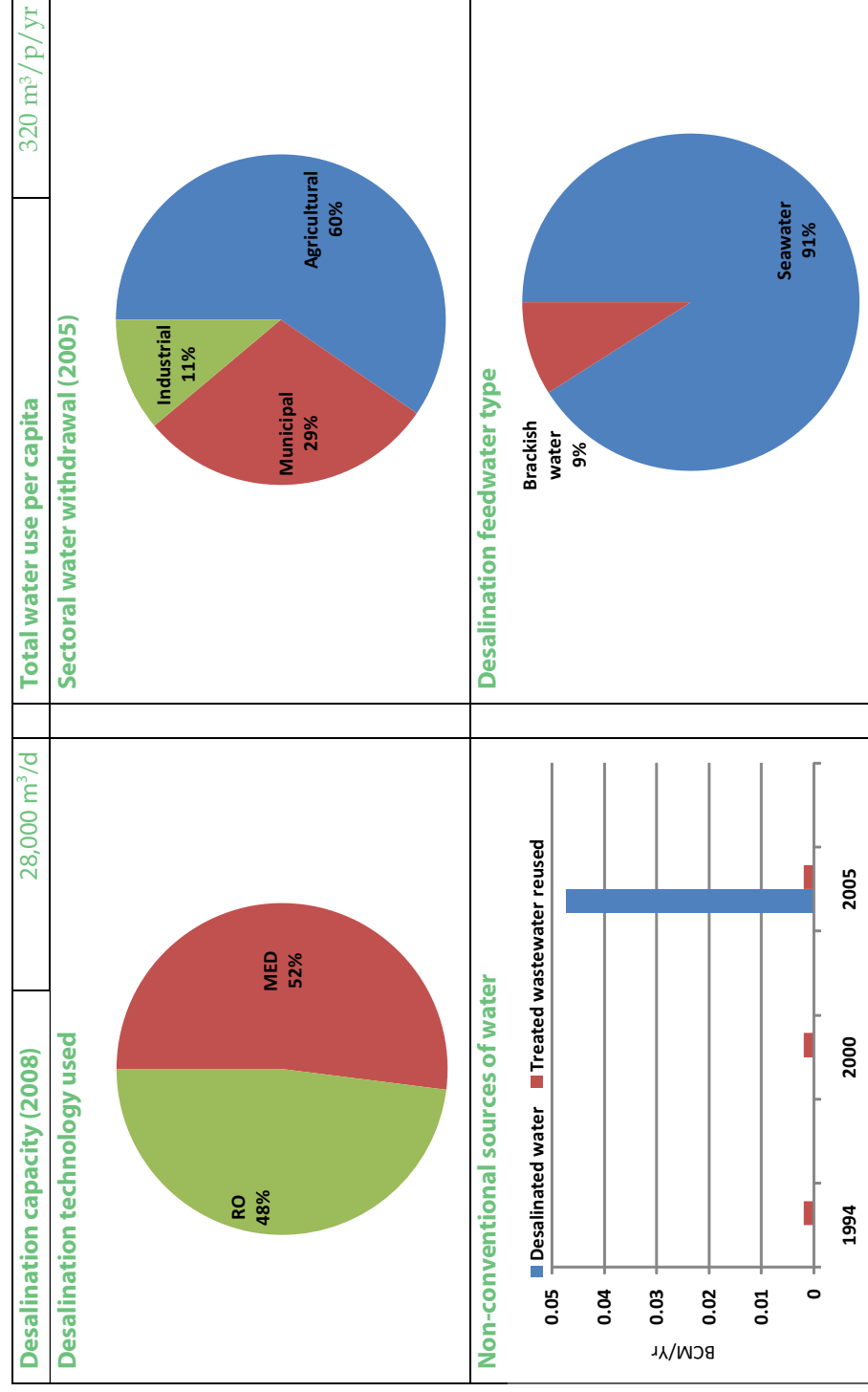
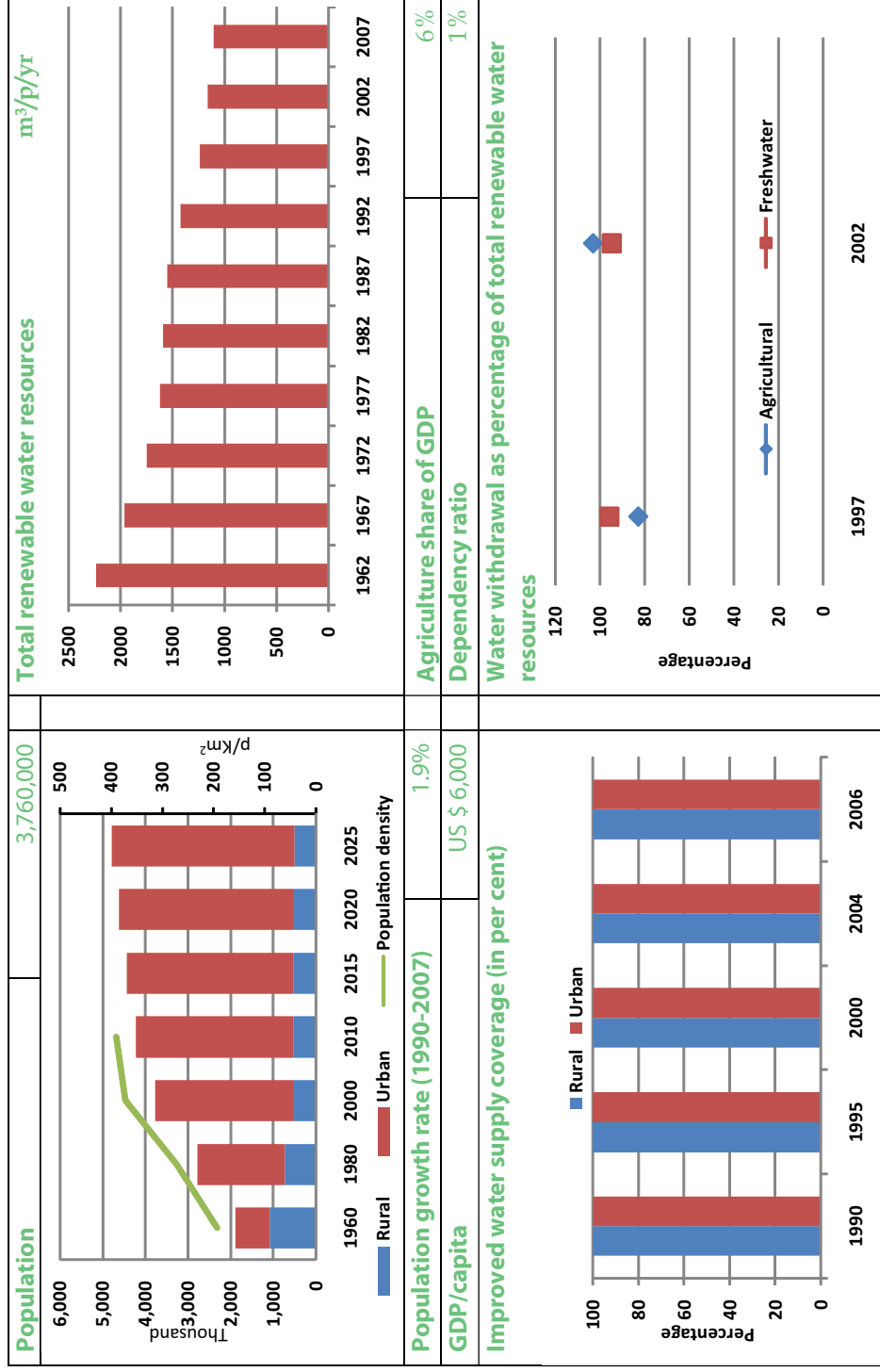
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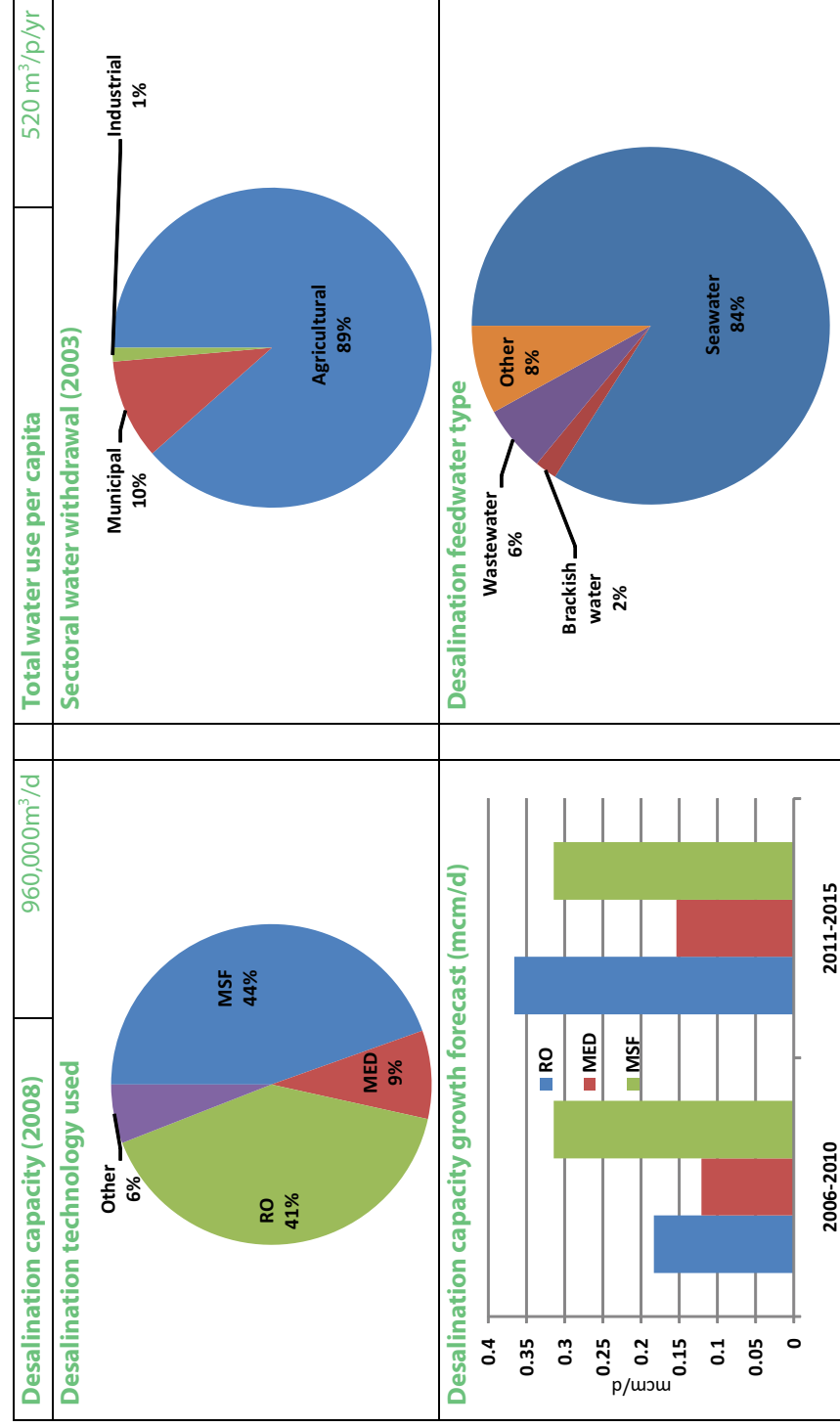
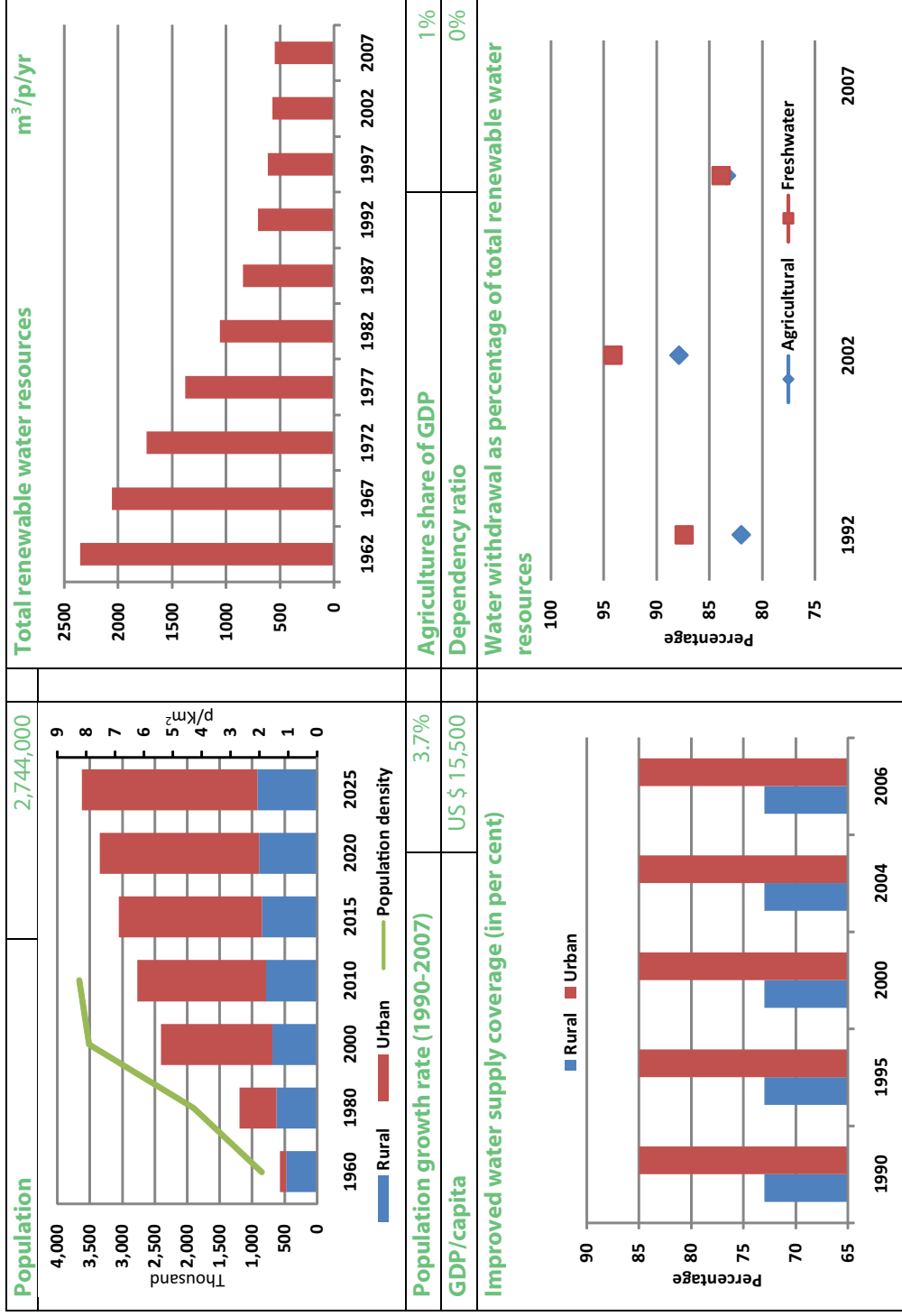


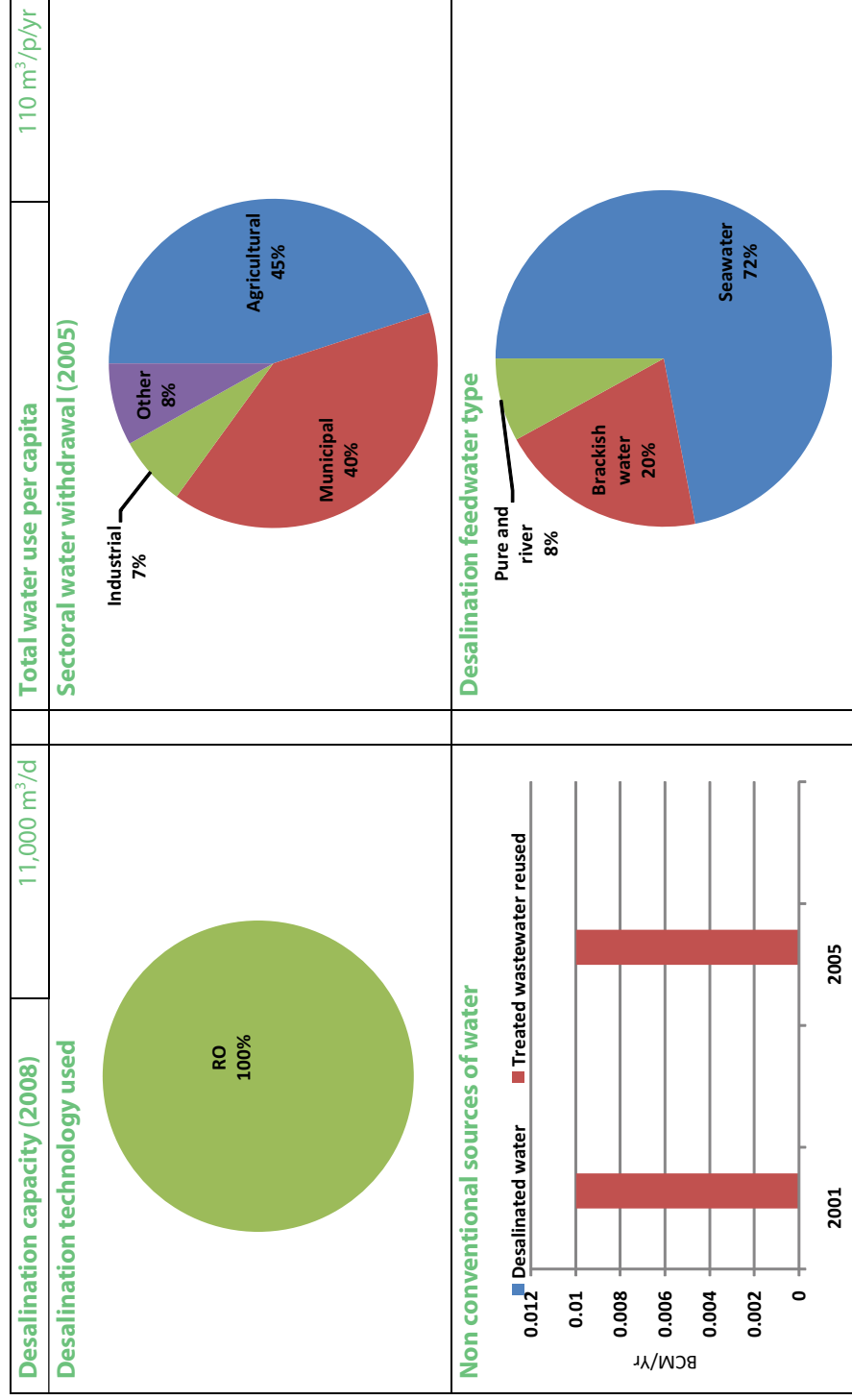
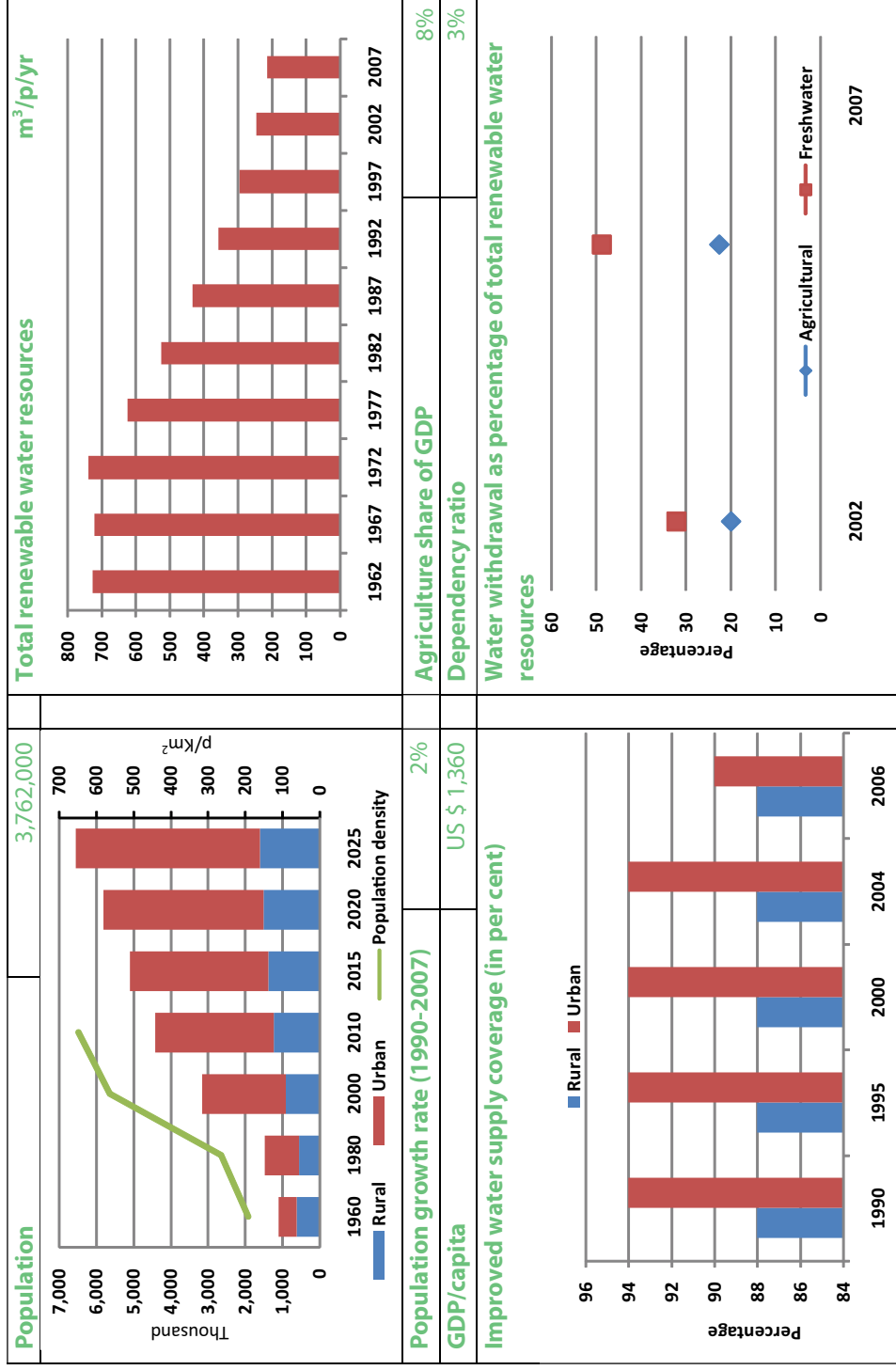




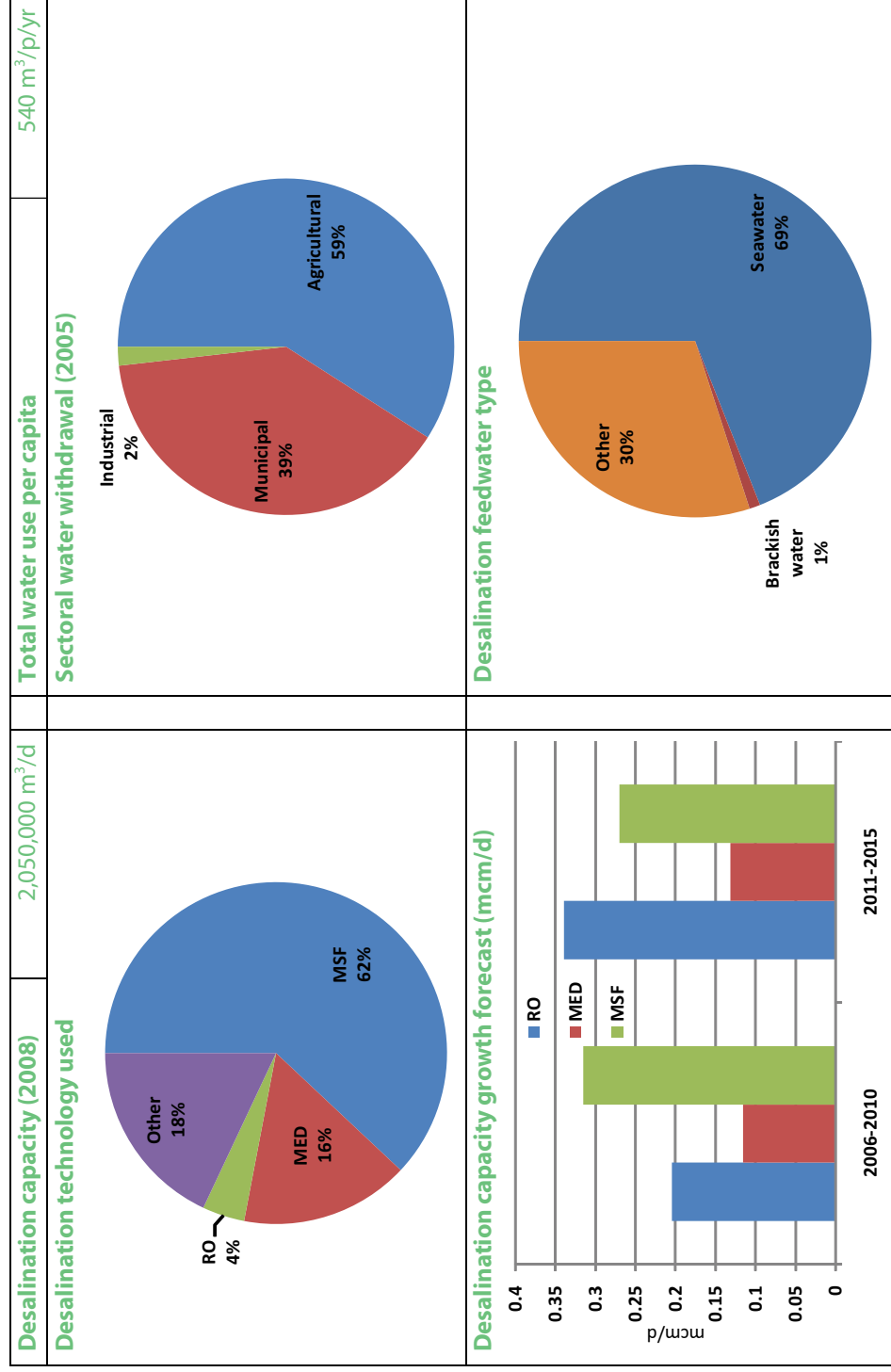
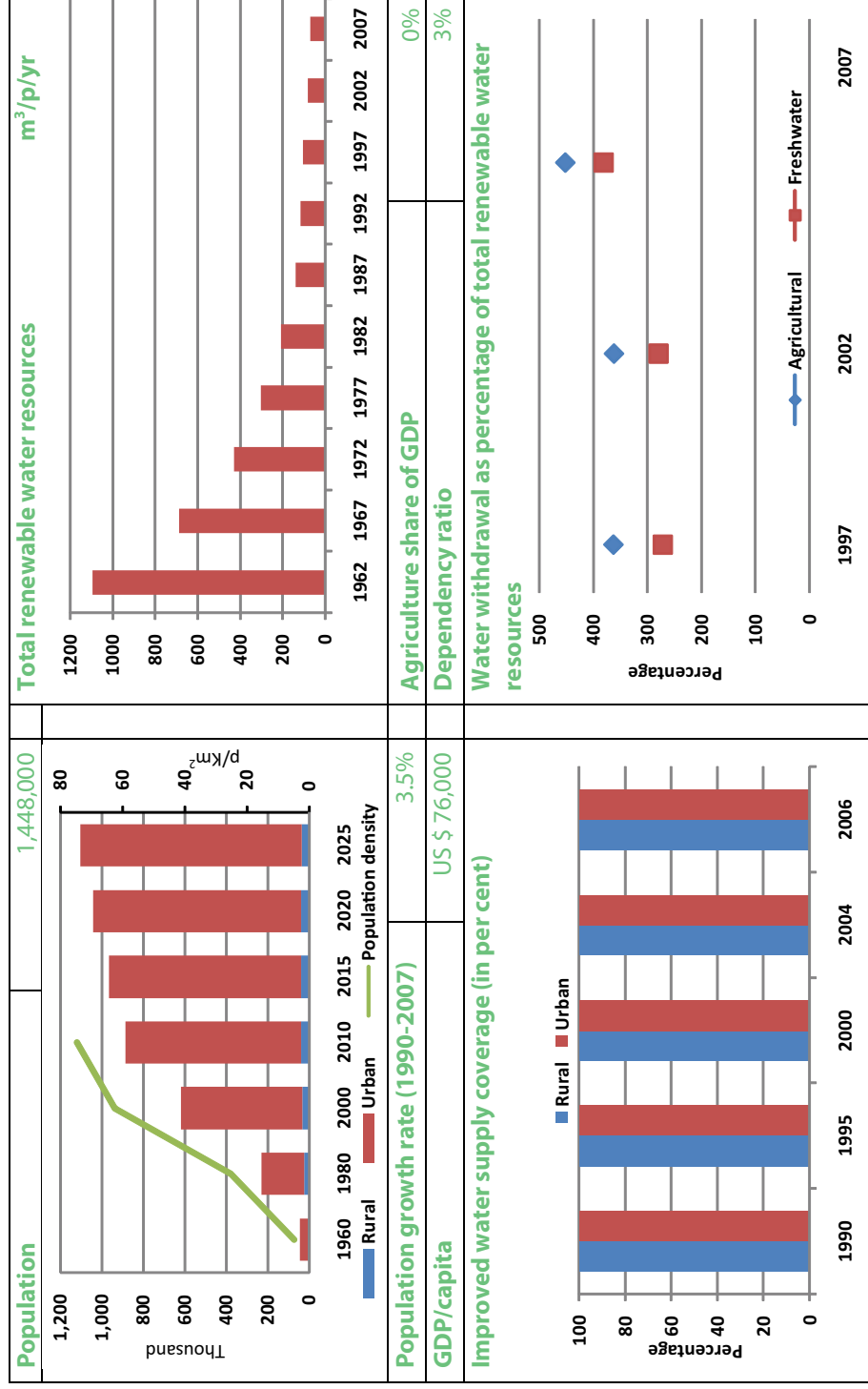


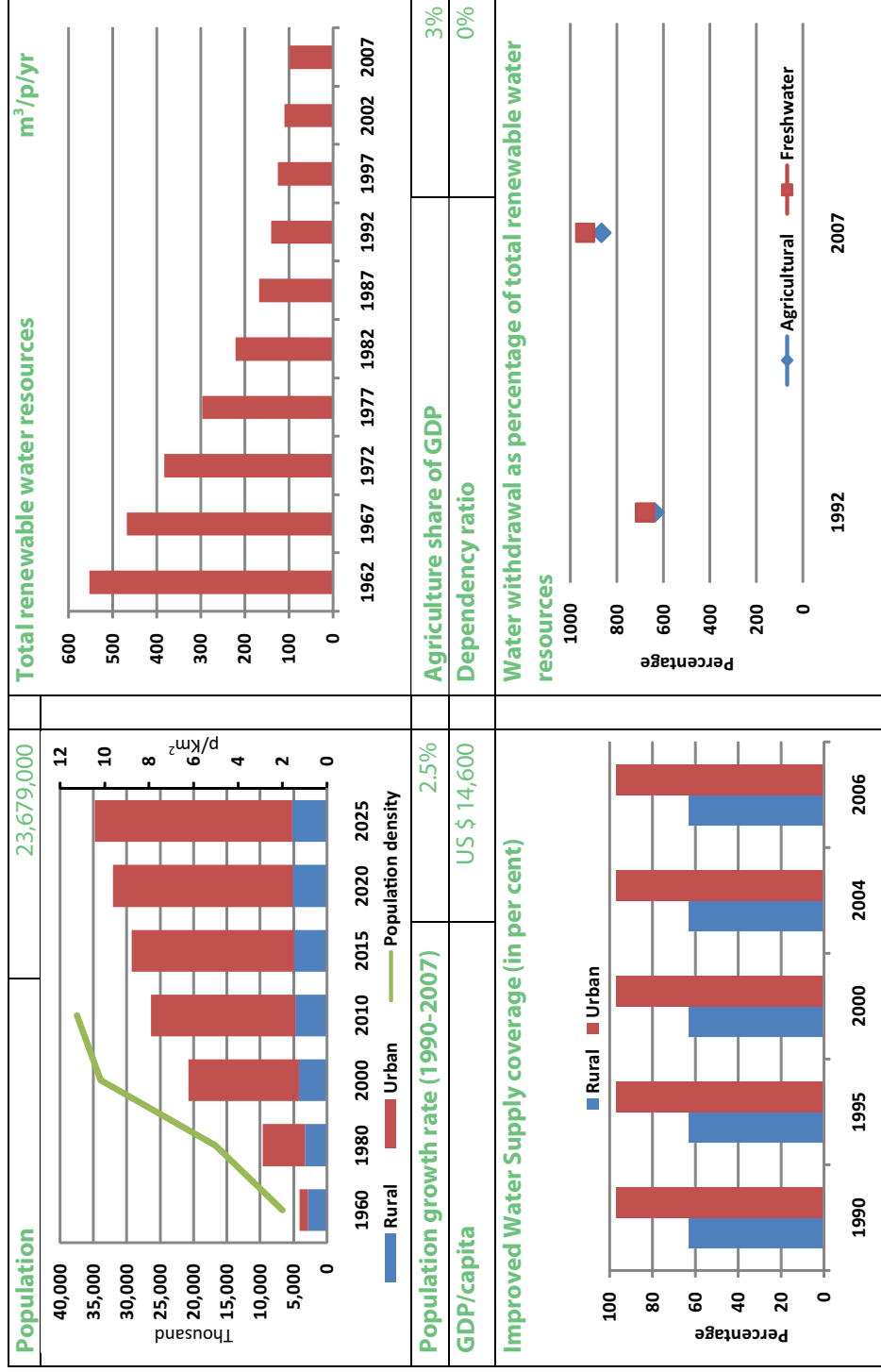






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