

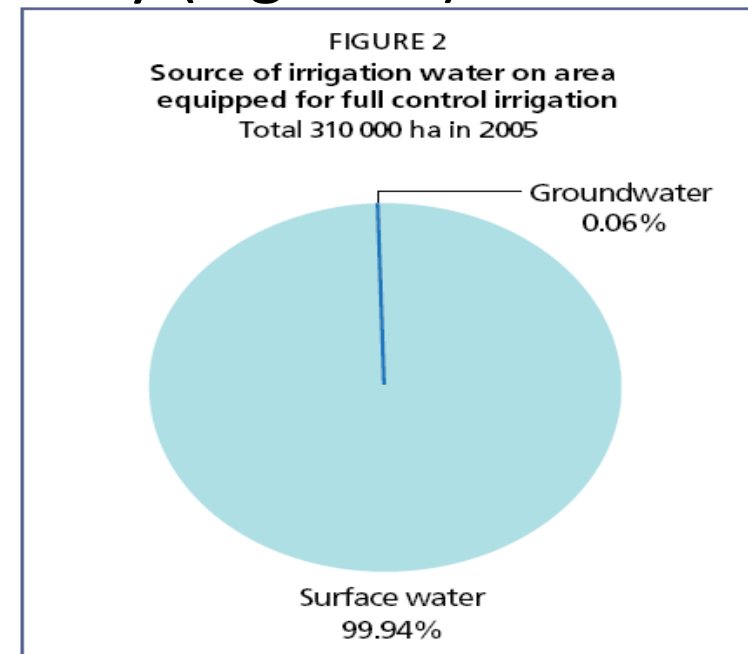
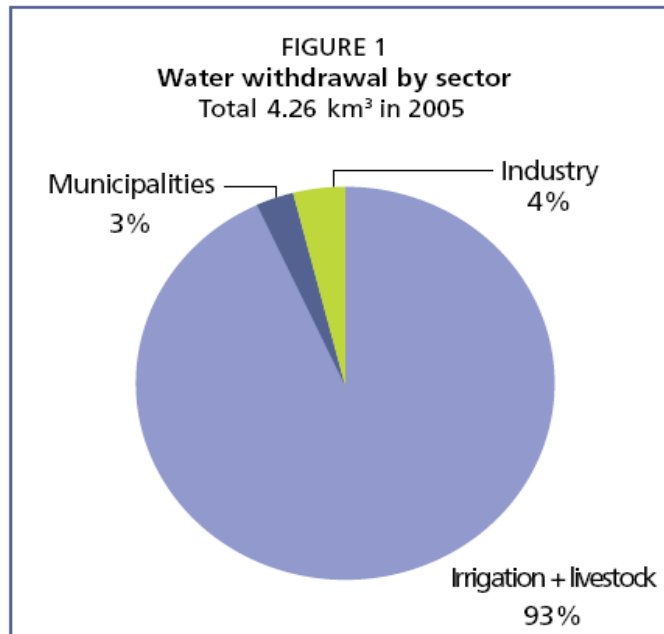
# **Wastewater Production, Treatment, and Use in Lao PDR. . . . .**

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# Wastewater use and/or disposal

- In 2005, total water withdrawal was an estimated 4.26 km<sup>3</sup>, which is only 1 percent of the total actual renewable water resources. Water withdrawal for agriculture was approximately 3.96 km<sup>3</sup>, while for municipalities and industries it was an estimated 0.13 km<sup>3</sup> and 0.17 km<sup>3</sup> respectively (Figure 1).



# **Regulations and implementation of guidelines**

- **Agreement of the Minister on Good Agriculture Practices for Environmental Management Standard, No 0538/MAF, Vientiane, Date 09/02/2011.**
- **Law on The Processing Industry.**
- **Law on Hygiene, Disease Prevention and Health.**
- **Regulation for Industrial Waste Discharge.**
- **Environmental Protection Law.**
- **Law on Water and Water Resources.**

# Challenges

- Inadequate legal framework and unclear institutional responsibilities;
- The access to “normal” toilet facilities is relatively good, but it is assumed that maintenance is poor;
- Wastewater from domestic areas, hospitals, industrial operations are discharged directly to urban environment;
- The hygienic situation is worsened by flooding in many urban areas;
- Lack of access and monitoring of wastewater services;
- Lack of awareness among communities and authorities on the benefits of improved wastewater;
- Lack of capacity among public institutions;
- Poor wastewater conditions will become a major drawback in order to encourage investment and tourism activities.

# **Government's approach to wastewater management**

- The Prime Minister's Office
- The Ministry of Natural Resources and Environment (MONRE)
- The Ministry of Agriculture and Forestry (MAF)
- The Ministry of Industry and Commerce
- The Ministry of Public Work and Transportation
- The Ministry of Energy and Mining
- The Ministry of Health

# Possible solutions

- Develop legislative aspects (Law, regulation or guideline on safe wastewater use for agriculture and health)
- Set up a Steering Committee including working group at each level
- Develop an appropriate strategy and action plan on safe wastewater use for agriculture
  - Strengthening capacity
  - Public awareness