

## Evolution of Irrigation-Equipped Areas as Share of Cultivated Areas

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Agricultural water management is one of the most parameters to achieve the sustainable development in the world. However, amount of irrigation-equipped areas as share of cultivated areas is low in the world. In addition, agricultural water management has been done poorly in some areas. Irrigated agriculture in some areas are goodly managed or/ and required water for irrigation is low in them. For example, Wriedt et al. [1] showed that required water for irrigation was only more than 1500 mm/year in two countries in Europe (Italy and Portugal) and for three countries was more than 500 mm/year (Germany, Spain, and Great Britain), while for other countries (16 countries) was less than 500 mm/year (include France, Netherland, etc.). Nevertheless, table 1 [2] shows that conditions of irrigation-equipped areas and agricultural water management are not properly in the world.

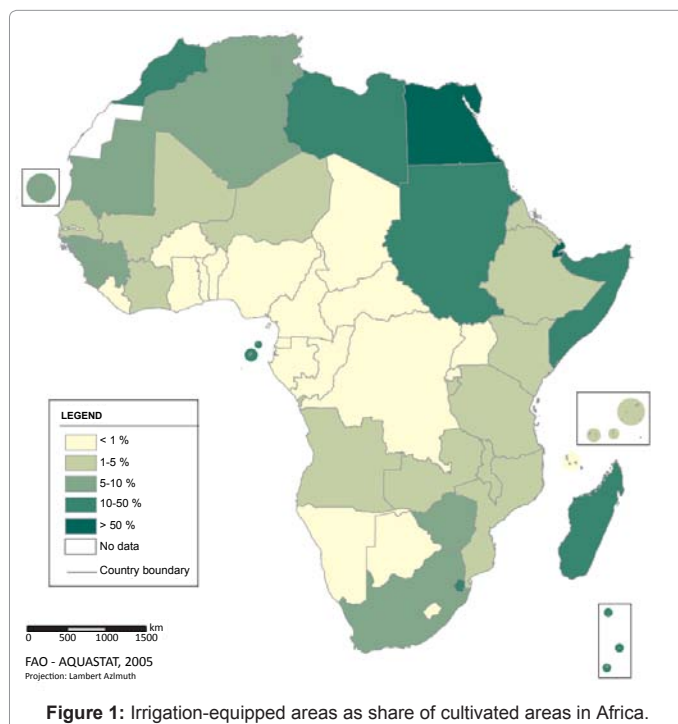
According to table 1, amount of irrigation-equipped areas as share of cultivated areas in Africa is significantly lower than Asia and the world. Percentage of areas actually irrigated as share of irrigation-equipped areas shows that more than 30% of irrigation-equipped areas are not used of their equipments for irrigation. This value is almost 20% for Africa. The mentioned data show that lack of use of equipment for irrigation (lack of irrigation) is out of the world standard (less than

10%). Finally, table 1 shows that amount of water-managed areas as share of cultivated areas in Africa is also significantly lower than Asia and the world. This means that water management is poorly even in rainfed cultivated areas (To give information about climate conditions to farmers and other management factors). Table 1 showed that Africa has a worse condition comparing other areas. Although water requirement for irrigation is low due to annual rainfall in some areas of Africa (especially in center), but figure 1 [3] shows that amount of irrigation-equipped areas as share of cultivated areas is lower than what is expected.

According to figure 1, more than 90% of countries (in Africa) have values of less than 10% for Irrigation-equipped areas as share of cultivated areas. This value is only more than 50% for Egypt. The mentioned cases show that lack of water management has an obvious effect on amount of irrigation-equipped areas in the world (especially in Africa and Asia). Many researchers have been done on agricultural water management by using different methods [4-17]. However, they are not enough because current condition in the world shows that water crisis will be first challenge for Earth in the future. Therefore, since any effort to increase irrigation efficiency led to improvement of agriculture and water use efficiency (WUE), the way is open for new ideas.

Region	Indicators (%)		
	Irrigation-equipped areas as share of cultivated areas	Areas actually irrigated as share of irrigation-equipped areas	Water-managed areas as share of cultivated areas
Africa	5.8	81.6	6.7
Asia	33.6	66.9	34.3
World	17.7	92.4	17.6

**Table 1:** Evolution of irrigation-equipped areas as share of cultivated areas in the world.



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