

Irrigation



Benefits

Irrigation expansion is important to the health of the agricultural industry. Improving the viability of individual farming enterprises, increasing the efficiency and economic viability of irrigation districts, and contributing to the economic and social success are the expected outcomes of irrigation expansion. Intensification of irrigation, and the concomitant expansion of the irrigated area and increases in agri-food processing, will bring numerous direct and indirect benefits in the future. These include primary agriculture production, municipal water supply, and recreational opportunities.

Problems

Fully 70% of all fresh water used every year throughout the world is used for irrigated agriculture. Only about half of all water withdrawn for irrigation, however, reaches the crops. The rest soaks into unlined irrigation canals, leaks out of pipes, or evaporates on its way to the fields. Badly planned and poorly built irrigation systems have limited the yields on one-half of all irrigated land about 120 million hectares.

Improper drainage is spoiling much of irrigated agricultural land. In many arid areas, salts that naturally occur in the soil must be drained away with irrigation runoff. If they are not drained, they accumulate in the soil. Eventually, they work their way to the surface, killing crops and poisoning the land. Poorly drained irrigation water also can raise the groundwater table until it reaches the root zone, waterlogging and drowning crops. Salt buildup in soil has severely damaged 30 million hectares of the world's 240 million hectares of irrigated land, and about 80 million more hectares have been damaged by a combination of salinization and waterlogging.

Solutions

Water recycling is a generic term for water reclamation and reuse, where the resulting water is referred to as recycled water. Water recycling can include recycling of wastewater from previous uses and recycling of water from agricultural and industry wastewater. Recycling of wastewater from previous uses generally means the reclamation of water from domestic sewage effluent or municipal wastewater. These waters may be recycled from bathroom and laundry effluents (grey water), from the entire domestic sewage stream (black water) or from municipal wastewater

Recycling our water can offer substantial benefits to our society including reduction of nutrient and contaminant loads into oceans and rivers, providing more drinking quality water for domestic uses by substituting drinking quality water with recycled water for irrigation of agricultural crops and amenity horticulture, and reduced stress on the groundwater and rivers by providing alternative water supplies