

# **EFFECTS ON IRRIGATION UNDER THE MAHAWELI SCHEMES DUE TO POLLUTION OF BALAPITIYA OYA**

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## **IRRIGATION**

Irrigation may be defined as a process of artificially supplying water to soil for raising crops. It is a science of planning, designing, and implementing an efficient, low cost system tailored to fit the natural condition. It is the technique of controlling and harnessing the various natural resources of water by construction of dams and reservoirs, canal and related structures and finally distributing the water to agricultural fields.

Water is normally supplied to the plants by nature through rains. However the total rainfall in particular areas may be either insufficient or ill timed. In order to get the maximum yield it is essential to maintain the quality and quantity of water and also maintain the correct timing. This is possible only through a systematic irrigation system that is collecting water during the period of excess rainfall and releasing it to the crop as and when required.

All the irrigation systems are so designed, they increase the food production of the country. Apart from the increase in food production, there are many indirect benefits or advantages, as summarized below.

- ⊗ Increase in food production.
- ⊗ Cultivation of cash crops.
- ⊗ Addition to the wealth of the country.

Increase prosperity of people.

- ⊗ Generation of hydro power.
- ⊗ Domestic and industrial Water supply.
- ⊗ Improvement of Communication
- ⊗ (Construction of Roads, and other means)
- ⊗ Improvement of ground water table.

The Mahaweli project is also so designed as a comprehensive multipurpose water resource development that will harness the hydro-electric, Irrigation, water supply and employment.

In addition to rice production, the systems have been identified. suitable for other crop cultivation as in practice. They are namely sugar cane, cotton, soya bean, ground nut, lime, mango, cashew etc.

## **POLGOLLA BARRAGE AND BALAPITYA OYA IN IRRIGATION**

Balapitya oya originates from Alawathugoda and passes through Akurana, Ambatenna and Katugastota before it reaches Polgolla barrage. Balapitya oya, which meets the Pinga Oya at Ambatenna and leads to meet the Mahaweli Ganga at Katugastota, is one of tributaries of Polgolla barrage. This stream contains polluting Polgolla barrage by collecting polluting sources from its entire catchment area.

Water from Polgolla barrage is passed in two ways for irrigation and power generation. One is through a tunnel to Ukuwela power station and leads to agricultural areas of Mahaweli scheme. Other is to Victoria Reservoir and then to Randenigala, Rantambe, and leading to other irrigation areas. In addition, consumers of Balapitiya oya use this water for irrigating their own home gardens, small farms, nurseries etc.

Thus, pollution of water in Balapitiya oya Cause effects in irrigation on following.

- Consumes of Balapitiya oya
- Irrigation Area at the Downstream of Mahaweli scheme.

#### **ENVIRONMENTAL PROBLEMS IN CONNECTION WITH BALAPITIYA OYA**

The catchment with highly populated area. Polluting factors can be due to,

- Garbage
- Nutrients
- Aquatic weeds
- Sediment

#### **GARBAGE**

Present of garbage is mainly due to domestic waste, agricultural waste, industrial waste (in the case of Balapitiya oya saw dust, paddy husk etc), waste from shops, hotels and Markets (Vegetable refuse, coconut shells, banana trees, polythene bags, timber logs, coconut leaves etc.) These are collected by the stream during its travel to the barrage.

❖ In some places garbage is directly thrown to the river. The diversion of

water at Polgolla was found difficult due to blockage of debris during some periods especially after heavy rains.

#### **NUTRIENTS**

Since Polgolla is a barrage, which doesn't store water for longer period, the nutrients get trapped in other reservoirs in the downstream. This collection is mainly due to fertilizers and sewerage disposal to the stream without treatment in the catchment area. This causes health hazards as well.

Water Hyacinth salvinia have been identified as water weeds in most reservoirs and canals blocking the irrigation procedures and losing the aesthetic views.

#### **SEDIMENTATION**

Sedimentation is another view of pollution in the Barrage from Balapitiya oya and other tributes such as Rawana oya and meda Ela. Urban erosion and dumping the soil into the streams contribute a major portion of sedimentation of Polgolla barrage.

#### **CONTROL OF WATER POLLUTION IN BALAPITIYA OYA**

Floating debris, sediment and pollutants getting in to the stream can be controlled and prevented by implementing the following.

- Solid wastes, liquid wastes and garbage should be minimized by introducing re-use and recycle practice. Low cost methods can be introduced.
- Mixing sewer to the stream without treatment should be completely stopped. Other possible methods can be introduced at the catchment.