Low delta cropping and micro irrigation techniques as adaptation measures of Climate Change in Northern Balochistan, Pakistan

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ABSTRACT

Balochistan province of Pakistan lies in Arid Zone and has been suffered by the worst impact of climate change in form of emergence of number of disasters like prolonged drought, flush flood and earthquake in last one decade. The province is a case study of climate change impact for researchers and thinkers. The increase temperature in cities, deforestation in different areas, degradation of natural resources, gradual decrease in annual rain fall and the ultimate outcome the prevailing poverty in rural areas are highly observable. Society of Balochistan has been just evolved from the orthodox livestock dependency to agro based. Though the province is being called as a basket of the fruit in the country due to its diverse variety of fruit production and land virginity and fertility yet the only source of irrigation is underground water which has been badly misused by influential members of society. The big farmers are pulling out and exploiting the underground water for twenty four hours for paying the plate rate (subsidies price by Government) of electricity the sole source of energy. This misuse of the irrigation water misbalanced the equipper of the water of centuries. The water table is going down for couple of feet per year. On the other hand the irrational practices of irrigation and agriculture like high delta cropping (apple) and flood irrigation ignited the situation and created the problems of food security and environmental sustainability. Hence to conduct in-depth study of the micro irrigation system and low delta cropping (grapes) with flood irrigation system and high delta cropping (Apple and Apricot) respectively remained the top priority issue.

Keeping in view the aforesaid facts and finding a study was conducted based on the intensive research of investigation of fifty farmers involved in flood and micro irrigation systems and low and high delta cropping through a pre designed questionnaire. A systematic sampling in a sub divisional area was adapted and the method of the research was participatory and different tools of PRA were exercised.

The results of the study were tremendous and significantly different from each other. Like the minimum energy required for pumping out the underground water more than 400 feet is 15 HP while the maximum energy required for less than 200 feet depth is 15 HP likewise the monthly expenditure of 15 HP is PKR 8000 and it goes up to PKR 21000 in case of 50 HP pump.
The emphasized factor of the research give and impressive result as well for example the

minimum number of irrigation (17) for grapes where as the maximum number of irrigation (25) for apples (Khair. M. K, 2012). Similarly 16 liters of water per irrigation were consumed by grapes while (49) liters of water were consumed by apples per irrigation water requirement of low delta. Tremendous results were obtained in case of net income by the crops the highest income PKR 739676 were generate by grapes, followed by PKR 619788 by apples while the lowest income 267687 was generated by apricot (Nasim.M. ***et al***.2010).

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