

Housing, Drinking Water, Sanitation, Road network And Electrification

The general conditions of majority of villages is satisfactory as most of the houses build in the village are either RCC or Tiled and there only 2 – 3 % of kutchha houses. All the villages has facility of drinking water having taps within the houses. Only 2% of the population is dependent on drinking water from taps outside the houses. There are no open wells and ponds for drinking water. Also the hand pumps are non functional due to depletion in water but only few hand pumps that too along side Bhakhra main line and Rajpura canal are in working conditions. There are no public latrines in the villages and the rural folks are either dependent on latrine inside the house or in open fields. The disposal system of latrines is deep pit type and that too near the source of drinking water which is the major concern as the human and animal waste needs to be dumped far away from source of drinking water. There are 33 primary health centers, 6 CHCs, 5 dental clinics, 27 ayurvedic and 2 homeopathic dispensaries but there is not even a single 25 bed hospitals situated in rural areas. As far as electrification is concerned, 100% villages of district Patiala are fully electrified and there are different lines of supply for domestic and agriculture sector. During the peak season, the demand for electricity grows many folds but due to non availability of electricity, power cuts are imposed and sometimes upto 10 hrs for domestic supply. The farm sector has been subsidized with free power supply for tubewells and is receiving 8 hours of electricity per day but the quality is not up to mark thereby causing in less pumping of water per unit electricity supplied. There is dire need to set up electricity generation plants and it may be thermal, nuclear or hydel. The annual percent consumption of electricity by

various sectors in district Patiala is given below in figure 15

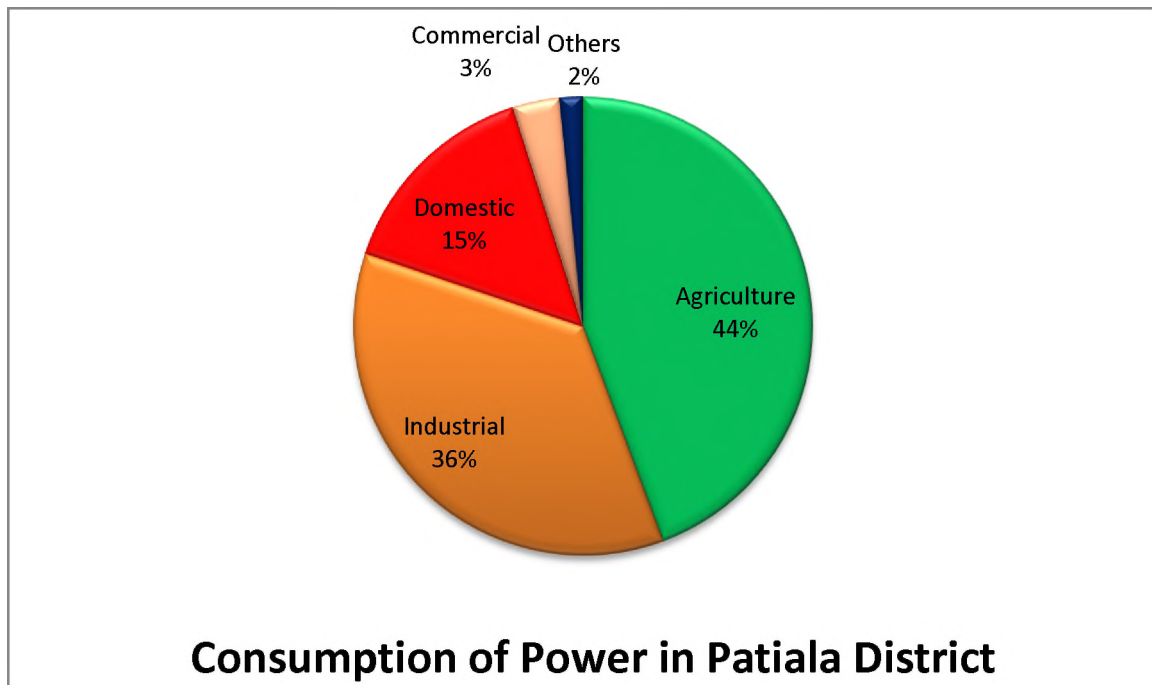


Figure 15 (Source: *Statistical abstract of Punjab and SPP under UNDP-TIFAC*)

zero tillage. The inspiration for such a paradigm shift was ahead of time because the crisis of herbicide resistance led to new opportunities.

After 40 years of green revolution, another shock of water crisis is under way. There has been a consistent but conspicuous decline in the water table during last 40 years. Subsidizing electricity also led to ignoring the consequence of hopelessly high energy use for extracting the amount of water from deeper depths. For many years we kept shrugging it off but now the time has come to re-look at the whole cropping system for saving water and electricity.

While drafting this plan, schemes have been included for starting special campaigns. Farmers can be persuaded to come to the rescue only if new technologies are risk free and provide adequate profits in any current year. In order to implement Punjab Government's newly introduced act "The Punjab Sub Soil Water Preservation Act 2008", introduction of Summer Moong to displace early sowing of rice, use of green manuring and lots of other resource conserving technologies will help farmers and policy makers cope with future water crisis. Although the RWCS is giving good and assured returns to the farmers but the worst part of this cropping system is that the sowing and transplanting of paddy takes place in those months which receive no or almost nil rainfall (**Figure 6/** p28) and as the result of it, the entire burden of irrigation falls on ground water as well as supply of electricity. With still more use of external

inputs and adding the cost of water extraction, the sustainability of this cropping will always be a cause of concern. Therefore, reducing the cost of cultivation and introduction of late sown short duration varieties of paddy will remain a priority area. Most farmers are sheltered from high input costs by subsidies but such subsidies now may have to be tagged with savings in natural resources. More a farmer saves without sacrificing yield more could be amount of subsidy.

The nutrient status in the soil has started to change with soils being low in phosphorus have increased significantly. Similarly the soil with potash category has been scale down significantly. The argument regarding imbalanced use of fertilizer has been brought forward but farmers in this region are using slightly more than recommended dose of nitrogen and phosphorus. Although, there does not seem to be a significant deviation between N and P ratio, and potash and micronutrients especially zinc and ferrous may need supplementation. Therefore, focus on ideal ratio of NPK, use of bio-fertilizers, use of pulses as intercrops, green manuring, use of farm yard manure and crop residue incorporation have to be brought in the form of special campaigns. Other issues include the use of micro-nutrient mixtures and extended use of gypsum. The decline in soil productivity with nutrients extraction is not always matched by nutrient input. The recommendation on fertilizer, therefore, may have to be revised upward to reach the target of 4% growth in productivity per year of rice and wheat in the XI plan. Similarly the increased incidence of insect diseases and weeds has to be monitored and managed using IPM and IWM practices

Right now there is no risk free substitute of rice or even wheat. Although for food security and the country we need both but we need to accelerate our plans to diversify to save water. However, search of farmers for more and more profits can help catalyzing, diversification in favor of an integrated farming system leading to more mulch animals per hectare, mushroom cultivation vegetable farming, intercropping and multiple land use systems.

Notables are instances of integration of vegetable and mushroom cultivation and up to some extent poultry and dairy farming where farmers have achieved commendable success, otherwise majority of the farmer are experiencing low productivity and profitability because of poor knowledge, inefficient integration without farming system technologies which include modern farm management skills that enable farmers to improve the efficiency, increase cropping intensity and to integrated and diversify into more high value commodities/enterprises in conformity with market trends. Similarly the demand for organic foods is on rise and this is right

opportunity for the farmers to adopt Organic Farming. The allied enterprises are important part of the farming systems. Both price and income elasticity of demand for most of these enterprise's products are high. There is huge unfulfilled demand for these products. The profit in farm income can be increased through self marketing and value addition of the products.