

Tracking Back the History of Green Revolution

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Abstract:

Norman Borlaug developed 'green revolution' to address the problem of food scarcity across world. Under the first five year plan much stress was given to the development of agriculture so as to make India self sufficient in terms of food grains. Green revolution in India came as a new ray of hope under the leadership of M.S Swaminathan by introducing high yield variety of rice and wheat saplings. It included application of modern agricultural practices that is fertilizers, seeds, irrigations and credit. The main focused area of the first green revolution was specially of Punjab, Haryana and Western Utter Pradesh. Why India need the Green Revolution and how it affects the socio-economic life of a farmer. This revolution not only met the food requirements within the country but also place it among the exporter countries of food grains. With time technologies may change; irrigation without

failing will remain important part of agriculture. Its role before and after revolution with remain persistent.

Modernization in agriculture among all the developing countries of the world in the great contribution of renowned botanist Norman Borlaug who is popularly known as "father of green revolution" by developing semi-dwarf high yield Mexican wheat variety (Brar, 1999, p. 23). This improved the food security conditions in Mexico, India, Pakistan, Philippines. The high yield variety of seeds in combination with modern agriculture production techniques proved a turning point in the modernization of Indian agriculture, it boosted intensive use of land resource enhanced utilization of water resource, changed cropping pattern and increased inputs. It became very helpful to fulfill the basic food requirements for the people. Main **objective** of this article is to look back and find the viability and

relevance of first Green revolution in India. It took irrigation an all-weather component of agriculture and tried to look into the issues related.

India needs the Green Revolution: After independence India was going through the phase of food scarcity. Under planned economic development, focus was first laid on agricultural development which was latter in second plan shifted to industrial development, regarding this the important support was given by U.S PL-480 program which provided bulk supplies of wheat, rice and cotton. India entered into five agreements worth \$ 500 million during plan 1st which subsequently furthered in 1956-59 worth \$ 923 million and in 1961-66 \$1.28 billion (Patel, 2012, p. 321) which rose to \$ 22 billion during third plan (Patel, 2012, p. 326), in addition to these PL 66S, title-2, and title-3 of PL-480. The importance of import of supplies as per the agreement, allowed increased consumptions which would otherwise have led to scarcity of food grains and inflation. It stabilized the fluctuations in food grain supplies, at the same time; it gave much needed motivation to government efforts for development of

agriculture facilities. Thereby, production of food grains increased 15% and national income rose to 5% per annum in 1950-51 to 7% in 1955-56 out sparing population growth of more than 10% per annum. Therefore, India enabled to reach the stage of self sustaining growth, building up stocks and stabilizing variations in domestic supplies. (Patel, 2012, pp. 319-324)

Green revolution in India: It came as a new ray of hope amid the food security crises in 1960s under the leadership of M.S Swaminathan by introducing high yield variety of rice and wheat saplings. This program was undertaken by C. Subramaniam, ministry of agriculture, government of India. India's program of green revolution was led by Dr. Dilbag, S. Atwal at Punjab Agriculture University in collaboration with ford foundation to import wheat seeds from International Maize and Wheat Improvement Center in 1959 (Singh J. , 1974, p. 14). Outcome of this collaboration was Intensive Agriculture Development Program popularly called "Package Program" (Frankel, 1971, p. 6). This package includes application of modern agricultural practices that is fertilizers,

seeds, irrigations and credit. Under this program India adopted IR-8, a semi-dwarf rice variety developed by International Rice Research Institute. IR-8 was successful throughout Asia and was given the name of “Miracle Rice” (Brar, 1999). This package program was initially launched in seven districts of different states of India which was further extended to 150 districts in 1964, resulting in substantial increase in production from 82 million tons in 1960-61 to 123.7 million tons in 1980-81 (Singh, 1983, p. 6). During this period the wheat acreage in the country which was 12.8 million hectares in 1966-67 rose to 15.8 million hectares in 1969-70 whereas the average yield per hectare rose from 887 kilos to 1263 kilos. It was for the first time that the empty granaries of India filled up and India was emancipated from the dependence on PL -480 supplies (Randhawa, 1974).

Agriculture being the mainstay occupation of majority of population has in-depth economic factor imbibed into it which affects the small and large agriculturist of the country. The cultivators of Haryana were categorized into

“progressive and non-progressive” irrespective of their land holdings (Bhalla, 1972, p. 31). It reveals that adoption of new and modern way of agriculture increased the income level of farmers as-well-as the total state income in Haryana. Green revolution has substantially increased income level of each category of cultivator, at the same time, the range of differences between household income of lowest non-progressive cultivator and of highest progressive cultivator has widened (Bhalla, 1972, p. 36). Thus northern part of Haryana is better than southern part of state. The efficiency of small farms was pertaining to institutional and technological availabilities (Chadha, 1979, p. 13). It stressed the importance of availability of new agriculture technology, canal irrigation and credit to farmers for agricultural income dividends (Chadha, 1979, pp. 115-116). Nevertheless, the success of a farmer in adopting new technology depends upon luck in finding adequate ground water, even small farmer with holding of two to five hectare, who have been able to bore tube wells successfully have adopted the new technology. The modern wheat technology is beneficial for both small and large farmers

in total crop production. It is for the first time, has acquired the value for the Indian farmers with the ready availability of water all year around from tube wells, double or even triple cropping has become a common practice (Randhawa, 1974, pp. 179-180).

The impact of new agriculture technology on production, relative crop production efficiency and income generation but did not touched the socio impact of raise income on living standards as revealed in depth (Chadha, 1979) “New Strategy” not only affected socio-economic pattern but it had wide spread impact on the geography of the area crop cycle as-well-as production (Bhalla, 1972). Here importance to geographical analyses of food grain production and sustainability of green revolution instead of socio-economic-political analysis. He pointed out that acute food grain shortage is persistent due to increasing population. Along with this he emphasized the problem of draught resulting in food grain deficit has become national problem. Besides, the new strategy of agriculture had led to new cropping pattern and is achieving remarkable unprecedented increase in crop yield and farm income but

regional imbalances in magnitude of accomplishments are not uncommon. Green revolution fails to diversify at the same time increase yield and diversification of other crops in different geographical areas which is why he referred to it more a Grain Revolution than Green Revolution (Singh J. , 1974). Furthermore, the grain revolution was particularly turned out to be a wheat revolution, for which the key factor was the price support policy for wheat adopted by government of India irrespective of geographical specification (Randhawa, 1974, p. 181).“Agriculture production of food grain can be tackled from two sides; Extension of cultivation to the uncultivated cultivable wasteland and by improving farm production performances per unit of arable land” (Singh J. , 1974). But they didn’t notify the importance of irrigation for agriculture production in sustainable way.

Role of irrigation with time span: It has been indispensable part of agriculture, irrespective of different phases of history. Irrigation immensely contributed in expansion and development of agriculture as well as production, which not only resulted in social prosperity of agriculturists but also

increased taxation from agriculture sector that was the major purpose of medieval and modern time's authorities. During 1960s major challenge was to increase food grain production in order to ensure food security of country which was undergoing serious food crises. Thus emphasis was on to shift from primitive practices to modern agricultural techniques to alleviate agriculture from stagnant production. Again, historical background of availability of irrigation in Punjab and Haryana area provided with prerequisite platform to introduce modern techniques. Consequently, the ushered era of persistent spread of irrigation all through the state till date. Therefore, the need study to an attempt to explore the impact of continuous exploitation of water resource, that efficiency and make future scope. Irrigation was and will remain the important aspect to preserve, promote and prosper agriculture as well as green revolution. It can never lose its importance as it serves as a basis for agriculture.

Modern techniques of agriculture development left variable mark on the various aspects of social fabric as-well-as

that of ecology. The impact was visualized on the soil health, water use, air and vegetation of that particular area. Thus impact of green revolution on ecology and its implications at regional level can be seen in canal irrigated area which suffered extensive water logging. (Brar, 1999, pp. 40-41). Contrary to this, the farmers in many districts leveled sand dunes and installed tube wells. Thus they have literally turned sand into gold and have started productive agriculture on lands regarded as useless (Randhawa, 1974, p. 181). The greater importance of historical factor behind the disruption in hydrological regime forest clearance for the extension of cultivable land for the change in ecology, which author noticed during the politically unstable times. Furthermore in post colonial period new canal system and irrigation caused water logging and salinity problems causing displacement. Thus the heavy demand posed on ecology for further conversion of land paved the way for green revolution. Author emphasized the importance of irrigation and sustainability of irrigation for future agriculture production but not suggested any measure for effective irrigation to be adopted in future (Brar, 1999)

Conclusion: Green revolution ever since its introduction has been an attention seeking area of research for various research scholars regarding the achievements and socio-economic political impacts. While studying the pros and cons of Intensive Agriculture Development Program, contrary to its vision the program implemented in selected districts, though achieved breakthrough productivity but the impact was limited to very small area, that too under wheat cultivation. The program was considered as “New Strategy” associated with agriculture modernization to support rapid industrialization and to reduce social disparity which was envisaged in 5 year plan (Frankel, 1971, pp. 6-7). Besides the achievement of this program, the unequal distribution accentuated class conflicts and social polarization, for which policy intervention and legislative majors to dilute the agrarian unrest and inequality were desired. Here we find that most of the authors give the regard to uplift the agriculture to the new technologies but they forget to the main force behind the all development is irrigation. With time span irrigation plays the negative role at some places because of mismanagement of

resources and policies. Overall the paper shows that the green revolution however contributed largely in expansion and development of agriculture still it seems to be insufficient keeping an eye on the ever growing food needs of the country. It is largely questioned on its sustainability. Along with it Water Scarcity is also an important issue to address because of water logging; water tables are going down with the passage of time. It makes irrigation an issue which needs a continuous and regular focus. However, it is up to the administration and civil societies to continue its work on it for the betterment of all.

References:-

- Bhalla, G.S (1972). *Changing Agrarian Structure in India*. Chandigarh: Publication Bureau Panjab University.
- Brar, K. Kranjot (1999). *Green Revolution: Ecological Implications*. Dominant Publishers and Distributors.
- Chadha, G.K (1979). *production Gains of New Agriculture Technology*. Chandigarh: Publication Bureau Panjab University.
- Frankel, R.Francine (1971). *India's Green Revolution - Economic Gains and Political*

Cost. New Jersey: Princeton University Press.

Green_ Revolution. (n.d.). Retrieved march 15, 2015, from [www.wikipedia.org/wiki/:
www.wikipedia.org/wiki/Green_Revolution](http://www.wikipedia.org/wiki/www.wikipedia.org/wiki/Green_Revolution)

Haryana State Gazetteer Volume - ii. (2005). Haryana: Haryana Government.

Patel, I.G (2012). The Role Of PL-480 Supplies In The Development Of India. In Y. R. Deena Khatkhate, *OF Economics, Policy and Development*. new delhi: oxford university press.

Randhawa, M.S (1974). *Green Revolution A Case Study Of Punjab*. Delhi: Vikash Publishing House Pvt. Ltd.

Singh, G (1983). *A Comparative Study Of I.A.D.P Districts In Punjab*. Ludhaina: Analitical And Operational Unit I.A.D.P Program .

Singh, J (1974). *The Green Revolution in India - How Green it is?* Kurukshetra: Vishal Publication.

Singh, S (1990). Impact Of The Green Revolution On The Socio- Economic And Political Life Of Haryana. In R. S. Amrik Singh, *The Green Revolution: A Symposium*. New Delhi: Harman Publishing House.