

## COMPARATIVE STUDY OF AGRICULTURAL AND INDUSTRIAL DEVELOPMENT IN PAKISTAN AND JAPAN.

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The development of agricultural sector is a necessary condition for the industrial development, the developing countries must learn from the industrial achievement of the developed countries where agriculture played a prominent role. Pakistan can only have a sustained economic growth, if the domestic resources are developed to a sufficient level, where the development is financed domestically. The self-sustained growth can be achieved if the agricultural sector develops, which will stimulate the industrial sector.

Economic development and growth is the central problem of the developing countries today. The economics of less developed countries are basically agriculture. The agricultural sector in these economies occupies a dominant position. It accounts for more than 50 per cent of the GNP and employs 80 per cent of the population.

There is a surplus labour engaged in the primary sector in a Lewesian type economy. The surplus labour can be made available to the industrial sector for capital formation and economic development.

Industrialization and economic development in these countries depend on the growth and development of the agriculture sector.

Advanced countries during the initial phase of their development, were dependent mainly on the agricultural sector. The modern economic growth of Japan, for example, was based on the increases and surplus savings from the agricultural sector during the Meiji period. Ohkawa and Henry Rosovsky<sup>1</sup> R.P. Dore,<sup>2</sup> and Yujiro Hayami,<sup>3</sup> agree that the agricultural sector played a significant role in industrialization and modernization of Japan.

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It was the agricultural sector which supplied the necessary surplus savings in the form of land taxes to the industrial sector in Japanese economic growth. A flexible labour supply was transferred from the traditional sector to the modern sector for economic development.

The agricultural output increased more than the rate of population, which made it possible not only to feed the growing population, but also earned the adequate amount of foreign exchange through the exports of tea and silk, thereby financing the economic development in Japan. The developing countries are passing through a situation which is closely similar to the economic situation prevailing in Japan, a century ago.

Agricultural sector can provide the impetus to economic growth in the developing countries as follow:-

- a) Through the increased and an accelerated growth of agricultural sector, the necessary foreign exchange can be earned.
- b) The surplus labour can be supplied by shifting from the agricultural sector to the industrial sector, which can be used for economic development at cheaper wages, without affecting the level of agricultural output.

### **LESS DEVELOPED COUNTRIES:**

The less developed countries are making endeavour to achieve the object of economic development and growth, by mobilising the resources domestically and extremely. The industrialisation, needs massive amount of capital to develop. The less developed countries are basically backward agricultural economics. The industrial sector is under-developed, too. Agricultural sector in these economies is the mainstay and the major source of income and employment. The population in the developing countries in general and in Pakistan in particular is increasing at a higher rate (3.1 per cent per annum) than the growth rate of GNP. The population in most of these countries has created economic and social problems. There is food shortage in these countries and hundreds of millions of people

are under-nourished. These countries are importing millions of tons of food grains from the advanced countries to meet the alarming situation. But in spite of the huge amount of import of food grain, still there are millions of people who are under-fed, starved and living below the poverty line, (US \$ 50 per cent annum is considered internationally as the subsistence level or poverty line). According to ESCAP (U.N.) publication 1974, the population living below the poverty line in India, Pakistan, the Philippines, S. Korea and Thailand is 142.5, 41.0, 10.4, 1.4 and 1.3.2 millions respectively.

The agricultural sector is important in these countries, because through increasing the agricultural output, the problem of food shortage can be solved. Which will release the pressure on the scarce foreign exchange resource.

The foreign exchange resources are being used for financing the import of food grain, which decreases the financial capacity of these countries to finance the most important sector, that is the industrial sector. The developing countries need to import raw material and equipment like machinery from the advanced countries to meet the demand of the industrial sector.

The agricultural sector occupies a prominent place in the less developed countries, particularly in the context of their economic growth and development.

The significance of the agriculture can be judged from the fact that it played a significant role in the development process of the advanced nations during the initial phase of their economic growth and development. In Europe, agricultural revolution took place before the industrialisation, which supplied the requirements of industrial sector for development and growth.

The agricultural sector in Europe provided raw material to the industrial sector, supplied the labour force and saving, the agricultural sector did not only provide the labour force and the raw material to the industrial sector, but it also provided a domestic market for the industrial products.



In case of Japan, the agricultural sector responded well to the needs of the industrial development by providing food, surplus savings (in the form of land tax)<sup>4</sup> and foreign exchange earning (through export of tea and silk) to finance the industrialisation during the modern economic growth.

A century ago, the Japanese economy was typical traditional and agricultural economy. The agricultural was the dominant sector. Eighty per cent of its population was gainfully engaged in the agricultural sector. Japanese population was increasing, but this increase lagged behind the increases of agricultural growth rate.

#### **INCREASING PRODUCTIVITY:**

Agriculture is of utmost importance for the industrial development of the less developed countries. As the industrial development depends absolutely on the extent to which the agricultural sector is developed. Agricultural sector is important for the industrial development and it can play a prominent role in providing raw materials, flexible labour supply, foreign exchange and employment to the people.

The standard of living of the people engaged in agricultural depends on the increasing productivity of agricultural. Their income will increase which will increase their demand for the industrial products, thereby a market for industrial products. The agricultural sector is the basis of economic development in a developing country like Pakistan with expanding population and economic development of Pakistan is directly associated with the development and the growth of agricultural sector.

The development of agricultural sector is a necessary condition for the industrial development. The developing countries must learn from the industrial achievement of the development countries where agriculture played a prominent role. It was improvements in the traditional sector that stimulated economic growth. The increases in the traditional sectors were brought about in the advanced countries by drastic and effective and reforms. The developing countries can embark on successful

industrialisation through increasing, agricultural productivity. To achieve this objectives the existing rigid and conservative land tenure system, dominated by feudal class should be replaced by effective land reforms. The peasants should be ensured permanent rights to ownership of land thereby creating incentive for them to increase the agricultural production.

Here I give a study of the comparative role of agriculture in industrialisation of Japanese and Pakistan economics.

### JAPANESE ECONOMY.

#### 1. Tokugawa period (1600-1868).

The tokugawa period which lasted for three hundred years; it was feudalistic and traditional. The country was divided into more than 250 fiefs (Han), feudal lords (Daimyo). The society was rigid and there was low social mobility, the people could not change profession at all. The occupations were determined by birth. During the tokugawa period, Japan was a typical feudal society, it was in this period that the factors of agricultural development were established. The land infrastructure was built which helped later in the Meiji restoration in the economic development of the country.

During the tokugawa period, the inter-regional trade developed, commercial and business centres in major cities of Tokyo, Kyoto and Osaka had emerged. Besides, there were many castle town throughout the country. The population of these urban and commercial increased, which expanded the demand for the agricultural products. The agricultural products were brought by the merchants to these commercial area for sale.

The transactions in these commercial towns were possible because of the existence of good means of transportation, like roads and water ways. There was a sufficient degree of commercialization, which created incentives for the farmer to increase the agricultural products. Such activities helped in increasing the productivity of agricultural sector.

The labour and land inputs were used to increase the productivity. Varieties of seeds and the fertilizers like deride fish were available in the well developed places like Kinki area.<sup>5</sup>

A typical feature of tokugawa period was that the feudal lords took the initiative and leadership to increase the agricultural productivity. They formed farmer's association and organization to guide them in increasing the productivity through the use of indigenous techniques. The feudal lords were interested in the well being of their tenants and patronised them.<sup>6</sup>

## 2. The Meji Restoration (1868):

The Meji Emperor ascended to the throne in January 1868 with the prime motive of modernising the economy. The feudalism was abolished and the title to land, was given to the farmers. The farmers were also given the right to trade and chose the crops for cultivation. The new regime granted the right to sell and purchase the lands in 1872.<sup>7</sup>

The government abolished the existing barriers to internal trade and opened the ports to external visitors. The most important reform was the revision of the land tax system. according to the revised land tax system, the tenants were required to pay tax in cash at a fixed rate of three per cent per year on the value of land. Formally the farmers had to pay land tax in kind and in proportion of quantities harvested.

The new system had dual advantages. Firstly, it provided a regular and stable source of revenue to the government in the forms of land tax, which was used for capital formation and industrial development. Secondly, it created incentives for the farmer to increase the agricultural production. Because more production meant more income and the tax was fixed on the value of land, not on the quantities harvested.

As a result, the production increased which helped in raising the agricultural productivity.



The economy during the Meiji era as a whole remained rural and traditional. The agricultural sector was the major source of employment and income.

According to Sydney Crawcour<sup>8</sup> the agricultural sector was the main source of employment of the population, the population. the sector-wise distribution of population in 1860's was as follows:-

Primary Industry	80 Percent
Secondary Industry	04 Percent
Tertiary Industry	09 Percent
Samurai	07 Percent

It is obvious that the major source of employment and income was the agricultural sector.

The agricultural net output increased at an annual rate of 2.3 per cent and the gross output increase even at higher rate from the year 1878 to 1917<sup>9</sup>. The labor productivity increased at 2.6 per cent per year. The growth in the agricultural sector was higher than the growth of population, during the entire period of Japanese economic development. The population growth rate of Japan increased from 0.8 per cent to 1.3 per cent during the entire period.

The growth rate of the agricultural output outstripped the growth rate of population, thereby leaving surplus resources to be used for the industrial development if the agricultural productivity had not increased at a higher rate it would not have been possible to transfer surplus resources from the agricultural sector to the industrial sector. But rather it would have required of the government to help the agricultural sector. The import of food to feed the population in case of decreased productivity in agricultural sector that transferred residual resources to the industrial sector for financing the economic development, during the entire period of modernisation.

## INDIGENOUS TECHNOLOGY:

The Japanese agricultural sector grew at a reasonably high rate during the Meiji era due to improved use of seeds and fertilizers. The increase of the agricultural productivity was possible because of application and use of the accumulated indigenous and traditional technology. The traditional technology was labour intensive and capital saving. The increase in agricultural productivity of land, by resorting to use of intensive cultivation.

The fertilizers seed varieties and other techniques developed in well developed part of Kinki area around Osaka and spread to other parts of the country. The foreign imported technology was modified in accordance with the suitable local conditions. The indigenous technology was cheaper as compared to the imported western technology, the agriculture sector was self-supporting and did not require substantial investment by the government.

The agricultural productivity increased in spite of the man/land ratio constraint during the Meiji era and the post war period.

Table-1 give a comparison of agricultural productivity and man/land ration between Japan and other developing countries of Asia.<sup>10</sup>

	Agricultural output per male worker	Agricultural output per sector	Agriculture land Area per worker
Japan 1887-88	2.5	2.9	0.9
1898-1902	3.4	3.4	0.9
1933-1937	7.1	5.5	1.3
1957-1962	10.7	7.5	1.4
Asian 1957-1962			
Ceylon	3.9	2.9	1.3
India	2.1	1.1	1.9
Pakistan	2.4	—	—
Philippines	3.8	1.9	2.0

Note. Agricultural output in wheat units; Gross agricultural output net of intermediate product, such as seed and feed individual products are aggregated by the price ratios to the price of wheat per one metric ton.



As workers; Economically active male population in agriculture. Agricultural land area includes permanent pasture land. The above table indicates that Meiji Japan had unfavourable man/land ratio if compared with the density populated countries in South Asian countries today. Such unfavourable man/land ratio was compensated for by higher land productivity.

### **FLEXIBLE LABOUR SUPPLY:**

It was the agricultural sector which supplied the cheap labour force to the industrial sector for industrial development throughout the modern economic growth of Japan, as there was a surplus and "unlimited" supply of labour.

Agricultural sector was the major source of employment and income in tokugawa snide Meiji Japan. Agricultural contributed more than 50 per cent to GNP of Japan. And the same is the case with the Pakistan's economy today. Agricultural sector accounts for more than 50 per cent in GNP of Pakistan even now.

The increase in a productivity of agricultural sector was necessary to feed the growing population and to allow the migration of the labour from the agriculture sector to the industrial sector.

If the agricultural productivity had not increased, there would be a food shortage which could create obstacle to the growth and difficulties for the urban population, the food shortages of course could be compensated for by importing food from foreign countries, but that could put a pressure on the foreign exchange resources of the country and take a portion of the valuable foreign exchange earnings for consumption, the prices of food in absence of the improvement of agricultural productivity could increase and worsen the standard of living of urban population, thereby raising the wages of the urban labour and causing terms of trade between the traditional and modern sector to deteriorate. The high wages would result in decreasing the profit rate of the entrepreneurs and thus, affecting adversely the pace of industrialisation of the economy.

Surplus savings. The industrial development depended on the surplus saving from the agricultural sector. The most important source of financing the industrial development in Japan came from the agricultural sector through surplus savings in the form of land tax which financed the industrial development.

The government received substantial land taxes in the Meiji era and invested these for building of social overheads and factories, the landlords, too, who received thereunto from tenants invested a part of it in the non-agricultural activities, which, help in the development of non-agricultural sectors of economy.

The surplus savings depended on increase in the agricultural productivity and again it was the increased agricultural productivity which made available such surplus resources to the industrial sectors.

#### **SOURCE OF FOREIGN EXCHANGE EARNINGS:**

In the absence of foreign capital inflow, it was the agricultural sector throughout the modernisation period of Japanese economy which financed the economic development and industrialisation through exports silk and tea.

#### **EDUCATION AND ECONOMIC DEVELOPMENT:**

Capital plays, of course, a prominent role in economic development and industrialisation of a country. But, mere existence of capital is not a sufficient condition for economic development. Economic development in a country depends on the efficiency and the quality of the human capital. The quality of human capital, that is the skilled and educated labourers, managers, entrepreneurs and administrative and economic growth. The efficient and superior quality of human resources can facilitate and accelerate the pace of economic development process and in efficient and unskilled human resources will retard the growth process.

Japan, throughout the period of modern economic growth, fortunately, had an educated and skilled labour force, which

accelerated the growth prices. In tokugawa period, the literacy rate in Japan was 30% in 1860, which was much higher than the literacy rate in most of the developing countries in Asia, today (For example in Pakistan, literacy rate is 20%).

In the Meiji era, due to compulsory education system, there emerged a highly literate labour force.

### PRE-WAR AGRICULTURAL GROWTH RATE:

The agricultural output grew at a faster rate in the early years of this century that is before 1910 and especially during the Russia-Japanese war (1905), the rate of growth of agriculture was 2.0% per year during the period 1900-1920.<sup>11</sup> The increased growth rate of agricultural output was because of the improvement in land and use of intensive inputs like fertilizers. But from 1920-1930, the growth rate of agricultural output decreased to one half of the previous level. The reasons for the decreasing growth rate of agriculture were due to the shortage of labour and other inputs as a result of involvement of country in China and Pacific war.

### 3. Post war Agricultural reforms:

Japan was devastatedly destroyed in the second world war. The productive capacity of manufacturing plants and the agricultural sector was destroyed. Industrial production declined to 1/4 of its pre-war level, there was food shortage caused by the destruction of the capacity of the agricultural sector. It was the most appropriate time for carrying out the land reforms to increase the agricultural productivity and to achieve the recovery of the economy.

Several, measure were taken by the authorities the increase the production. The new land reforms were carried out in post war Japan by the occupation authorities in 1950. According to the new land reforms, all the farm lands of the absentee land lords were purchased the government.<sup>12</sup>



The absentee landlords, however, were paid compensation for their lands by the governments; these lands were then sold to the tenants. As a result of the land reforms, the absentee landlord's position was totally undermined. The position of the tenants became stronger. The land reforms promoted equal distribution of income among the farmers, contributing thereby, to social stability of the rural sector. Another reform, which had a major impact on agricultural economy, was reorganization of agricultural cooperative associations.

Agricultural production recovered rapidly. The government control on food lifted in 1952 and the food shortage as a result of war destruction was completely dissolved by 1955.<sup>13</sup> The major factors for agricultural growth in post war Japan were rehabilitation and improvement of flood control and irrigation facilities and supply of new industrial inputs such as chemical pesticides and insecticides.

### **PAKISTAN'S ECONOMY:**

Pakistan is a new developing country, which came into being on 14<sup>th</sup> August 1947, as a result of partition of India, by the British government, the areas constituting Pakistan, are backward and underdeveloped. These areas namely Punjab, Sindh, N.W.F.P (North Western Frontier Province), and Balochistan, were underdeveloped even in undivided India. Among the four provinces, only the two are agricultural areas, the other two that is Balochistan and N.W.F.P. are mountainous and deserts.

### **PLACE OF AGRICULTURAL IN PAKISTAN'S ECONOMY:**

Agriculture occupies an important place in Pakistan's economy, particularly in the field of economic growth and development. Agricultural sector is the base of economic development in a country like Pakistan. The agricultural employs more than 80% of the total labour force. It contributes more than 50% to the GNP.

Agricultural sector supplies food to the growing population, the population is increasing at rate of 3.1% per year, which needs increasing food every year. Pakistan has been spending a lot of foreign resources on the import of food from foreign countries. The total amount of wheat imported from 1961-1974 was 1.046 million tons of wheat and 0.8 million tons of sugar. In terms of percentage, food import was 10.2% of total production in 1971 and it raised 20% in the year of 1970-73.<sup>14</sup>

The increasing agricultural productivity will assist in saving the foreign exchange spent on import of food and there by will finance the industrialisation.

The domestic industrial sector depends on the supply of raw materials from the agricultural sector. Agriculture provides a variety of raw materials, to the industrial sector, like cotton, wool and animal skin etc.

Agricultural as a source of foreign exchange earnings. In a developing country like Pakistan, which has poor capital resources, earning of foreign exchange resources is of utmost importance for the development depend on the availability of enormous amount of capital.

It is the agricultural sector which supplies the most important source of earning foreign exchange by exporting agricultural raw materials to foreign countries. If the agricultural sector remains backward, it will result in low exports and that will mean less foreign exchange earning and a gap in the balance of payments.

Pakistan can only have sustained economic growth, if the domestic resources and developed to a sufficient level, where the development is financed domestically. The self-sustained growth can be achieved if the agricultural sector develops, which will stimulate the industrial sector.

## **SURPLUS LABOUR SUPPLY:**

There is a surplus labour supply in agricultural sector, as Ranis and Fei and Arthur A. Lewis pointed out.<sup>15</sup> The surplus man power is unemployed disguisedly in the agricultural sector. The surplus labour can be supplied to the industrial sector for economic development and industrialisation at cheaper wages without affecting the level of agricultural production.

## **SIMILARITIES WITH JAPANESE ECONOMY:**

Pakistan, Cultural, traditionally and historically, is a different country from Japan, but her economy has similarities with the Japanese economy, particularly in the period of Japanese initial economic development almost over hundred years ago. The similarities with the Japanese economy, particularly in the period of Japanese initial economic development almost over hundred years ago. The similarities that Pakistan's economy are listed as follows.

1. Pakistan's economy resembles Japanese economy in the later part of Tokugawa and early part of Meiji restoration. The majority of population in that period in Japan was engaged in agricultural sector and living in the rural area, (80% approximately). The majority of Pakistan's population, almost 80% are engaged in agricultural sector and living in the rural area.
2. Agricultural sector was the major source of employment and income in Tokugawa and Meiji Japan. Agriculture contributed more than 50% to GNP of Japan. And the same is the case with Pakistan's economy today. Agricultural sector accounts for more than 50% in the GNP of Pakistan even now.
3. A flexible labour supply was in the Japanese agricultural Sector. The surplus labour force was provided by the agricultural sector to the industrial sector for industrial development in Japanese case.



There is a surplus supply of labour in the agricultural sector of Pakistan, which can be supplied by shifting to the industrial sector for economic development.

4. The major portion of agricultural production comprised of agricultural products like tea and silk, which earned the necessary foreign exchange to finance economic development and industrialization in Japan. Agricultural sector supplies the most important foreign exchange to Pakistan by exporting agricultural raw materials, such as cotton, wool mad animal skin etc. to finance the development process. Such exports make 75% of agricultural products.<sup>16</sup>
5. There was a dominant feudal class in Japan in Tokugawa and as well as in Meiji restoration in Japanese agriculture, these is a dominant class of landlords in Pakistan's agricultural sector to dominate the economy, politically socially and economically.

***Dissimilarities:*** The dissimilarities between Pakistan and Japanese economies can briefly be explained as follows:

#### **GEOGRAPHICAL DIFFERENCES:**

1. There are geographical, environmental and seasonal differences between the two countries, which affects the productivity of agricultural sector and the growth of crops in different ways. Pakistan is a country where rains are scanty and uncertain. There are deserted plains of land which are arable water lands. The temperature goes to 45 centigrade which affects the efficiency and the health of the farmers and labourers. Japan is a country where the rains are not scanty. And the temperature goes not go up beyond 38 centigrade.

2. The feudal lords in Japan were active and took the initiatives a leading group to increase the agricultural productivity through forming organization and association of the farmers to guide them in increasing the agricultural productivity. The feudal lords in Japan were much concerned about the welfare of their tenants and increases in agricultural sector. In Pakistan's case, the landlords are quite indifferent towards the welfare of their tenants and are not much interested in investing in the agricultural land to increase production.

They are indifferent because they own huge holdings in the various parts of the country which bring them sufficient income to afford luxurious life and conspicuous consumption. The huge holdings of the landlords are managed not directly by themselves, but through managers who act as agents between the tenants and the landlords, do not have interest either in the improvement of land, but rather in collection of land revenue from the tenants at the time of the harvest.

3. The different endowments in land resources Japan is a country where the land resources are scarce, the techniques of production in agriculture in Japan were aimed at land saving techniques and the development of an indigenous technology of land interest cultivation. Such technology which developed in Japan helped in increasing the productivity of land while economizing capital in agricultural sector.

Pakistan is a country where the land endowments does not become a constraint for cultivation. There are huge plains of land and vast areas which can be called as arable waste lands, can be brought under cultivation.

The techniques of production in Pakistan is extensive land cultivation, as there is abundant land.

But soon, the abundant resources of land will diminish due to growing population. And therefore, intensive land cultivation can be the only alternative to increase agricultural productivity.

4. Difference Level of Technology:

Japanese developed domestic indigenous technology which were land and capital savings, the western imported technology was improved and modified in accordance with the local environment and conditions which helped increasing the production in Japan.

In Pakistan, there was a traditional technology, which was used for cultivation of land. Still the traditional techniques are used like iron plough and draft animal and the cowdung as fertilizer in agricultural sector.

The traditional techniques did not help in increasing the productive of the agriculture.

5. Regional differences in language, culture and custom in Pakistan.

Pakistan consists of four regions which are quite different from one another in language, culture and custom. Such regional differences create social and economic problems for the country which affect the productivity of agricultural and industrial sector, too.

In case of Japan, there was no such differences in language and culture and traditions during the economic, development of Japan which helped not only in political unity but economic unity and integration in Japan.

6. Low agricultural growth rate:

The agricultural sector in Pakistan has been growing at the annual rate of 1.5% in 1950s. 3.5% from the years 1955-1960, and 3.1% from the year 1960-1970 and less than 1% from 1970 1975.<sup>17</sup> The growth rate registered in agricultural sector has



been fluctuating from year to year because of the fluctuating seasonal factors.

Thus, the growth rate of agricultural sector was lower than the growth rate of population which necessitate the import of million of tons of wheat from USA under the PL480 and other foreign countries, from 1960s till present day to feed the growing population.

But the agricultural sector in Japan, grew at a stable rate and more than the of population throughout modernisation period.

7. Difference in population growth rate:

The population in case of Japan was increasing at a rate of 1.3% throughout the modernization period.<sup>18</sup> While the population has been increasing at higher rate. The growth rate of Pakistan's population was greater than the agricultural growth rate.

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