

**FOOD SECURITY IN JAPAN: UNDERSTANDING
GOVERNMENT POLICIES AND ITS IMPLICATIONS 1995-2013**

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DECLARATION

I declare that the dissertation entitled "Food Security in Japan: Understanding Government Policies and its Implications 1995-2013" submitted by me for the award of the degree of Master of Philosophy of Jawaharlal Nehru University is my own work. The dissertation has not been submitted for any other degree of this University or any other University.

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CERTIFICATION

We recommend that this dissertation be place before the examiners for evaluation



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Preface

This thesis is a quest to understand the problem of food security in Japan and to analyse the agriculture policies so as to seek an answer as how much the policies have been successful in ensuring food security. The aim has been to delve and shed lights on all those factors that have played various roles in making Japan food insecure. The attempt has been made to provide an interdisciplinary study on the Japanese food security problem and therefore this thesis draws findings from historical, political, economic and agricultural studies.

Food security problem emerged in Japan during the Second War period but it became the most important concern since the period of high economic growth. With economic growth the agriculture sector as a whole declined both in terms of contribution to the economy as well as in supplying continuous staple food. At, the same time the change in the dietary pattern of the people due to the rise in per capita income exacerbated the problem of food security further. This thesis presents a detailed analysis both quantitatively and qualitatively of the dietary transition in Japan and its impact on the agriculture sector. Further an in depth assessment of the agriculture sector is carried out with the objective to understand the problem for low and declining domestic productivity in Japan.

While analysing the agriculture sector it was found that the agriculture and the politics has a strong bondage and therefore this thesis has made a detailed attempt to understand the relationship. In addition, this thesis also delves in importation of food by Japan so as to know whether food imports will be helpful in ensuring food security. The main intent of this thesis was to understand and analyse the agriculture policies of Japan.



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For any errors or inadequacies that may remain in this work, of course, the responsibility is entirely my own.

Pravhat Lama

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LIST OF ABBREVIATIONS

- AMS Aggregate Measurement Support
- DPJ Democratic Party of Japan
- FAO Food and Agriculture Organisation
- LDP Liberal Democratic Party
- MAFF Ministry of Agriculture, Forestry and Fisheries
- TRQs Tariff Rate Quotas
- URAA Uruguay Round Agreement on Agriculture
- WTO World Trade Organisation

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CHAPTER 1

INTRODUCTION

Virginia Woolf once remarked –“*One cannot think well, love well, sleep well, if one has not dined well.*” As Woolf illustrates without food there could have been no civilization and no life.

Food is an absolute necessity for human survival. The concern on the availability and supply of food existed since the time humans were food hunters and gatherers. In search for food people often moved from one place to another. As human civilised, they progressed to finding ways to grow food and then they started sowing food. From hunting tribes, human moved to farming and then agriculture began to develop.

As time passed people made efforts to sustain the supply line (or ensure security) of food as well as increase its production. Then the crisis related to food was confined only to the limited area.

The world started getting affected with food crisis with the wake of World War II, which destroyed food supplies; yielding the creation of the Food and Agriculture Organization in 1945 (Barclay and Epstein, 2013: 217). The world then became aware of the problems associated with the food security.

Over the years many definitions about food security came into existence however, the definition given by the United Nation’s Food and Agriculture Organisation (FAO) during World Food Summit 1996 came to be widely acceptable. It defined-- “Food security exists when all people, at all times, have physical and economic access to enough safe and nutritious food to meet their dietary needs and food preferences for an active and healthy lifestyle” (FAO, 2013 :16-17).

In 1970s the world had faced severe food crisis due to poor harvest. Similarly in 2007-2008 the world faced another crisis due to steep rise in the market price. This

led to rapid rise in the number of hungry people in the world. In 2011-2013 a total of 842 million people or around one in eight people in the world, were estimated to be suffering from chronic hunger, regularly not getting enough food to conduct an active life (FAO, IFAD and WFP, 2013:8). The number of people suffering from chronic undernourishment is still unacceptably high, and eradication of hunger remains a major global challenge (FAO, 2012).

The others problems such as population growth, a destabilizing global economy, climate change, low agricultural production and volatile food prices have added to problems of availability, supply and access of food at affordable price. For instance, the effects of climate change is not confined to one particular region it affects the entire world. Similarly the rise in food prices affects every part of the world. Further if the harvest is poor in the food exporting country the effect of it felt even wider. Hence, the problem of food security has engulfed the entire world. With world being a global village ensuring food security has a cause of great concern.

But within this larger framework of the problems on food security, the case of food security in Japan is different. Challenges faced by Japan are not of the same nature. In the Japanese context, ensuring food security generally means increasing self-sufficiency ratio¹ through continuous and stable supply of food from the domestic production. The problem is not only about growing enough staple crops such as rice but also meeting the demand for food, for which people in Japan have developed taste (Balaam, 1984: 281).

Japan is an island country, with most mountainous area having steep terrain and heavily covered with forest. In 2013 out of the total land in Japan 66.3 per cent was forest area, 3.1 per cent residential area and 12.0 arable land. In this light, the lack on cultivable land has been the most important factor, which in turn has acted as a main hindrance for limiting the expansion of arable land in Japan.

The problems of food security surfaced in Japan since the 1960's, the period of high economic growth. During this period income of the people rose at rapid pace,

¹ Food Self-Sufficiency ratio : Food self-sufficiency ratio on a calorie basis is an index that shows the ratio of calorie supply from domestically produced food compared to the total calorie supply from food in the country (Kako, 2010).

particularly those working in the industries. Consequently, rise in income also led to change in the eating habits of the people from traditional Japanese cuisine to western dietary habit. The traditional Japanese dietary pattern comprised of rice, fish, soybeans and vegetables and the westernized food pattern of food comprised of meat, dairy and wheat products, and high protein foods. This change in dietary pattern on the one hand led to decline in demand for traditionally consumed food items. Particularly the demand for rice fell sharply in which Japan was self-sufficient. On the other hand the change in dietary pattern compelled Japan to import food.

Further, the rapid economic growth and industrial development brought two significant changes in the structure of Japanese agriculture. First, due to rapid growth of industries demand for labour increased. This resulted in the migration of young workers from farms to industries thereby, leaving the entire responsibility of farming on the shoulders of elderly people who were at the same time ageing. This, migration of workers also led to the overall decline in the farming population.

Second, as migration of workers from rural to urban areas took place, it was anticipated that such movement would allow the consolidation of many small farm units into larger farm units, thereby making large- scale farming possible. In reality this did not happen. Instead the farmers engaged in other industries kept the land and were unwilling to sell the land. This happened due to rise in land prices and growing demand for land. As a result instead of consolidation of small farms, there was a rise in the growth of part-time farmers, farming just rice and earning substantial off farm incomes. This decline of the farming population, failure to consolidate farms and rise in part-time farmers led to decline in the domestic agriculture productivity. As a result self-sufficiency ratio on calories basis also declined. Japan's food self-sufficiency ratio on calories basis was 79 per cent in 1960 and it had declined rapidly to 39 per cent in 2013 (MAFF, 2014).

To substantiate this decline in agriculture productivity and to meet the demands of changed dietary pattern, Japan started importation of food. Within a short period of time Japan became one of the largest importers of the food in the world.

Initially Japan never felt threatened about its supply line for food, as it was able to import sufficient amount of food from the world market. But the events of 1970s

when there was a rise in price of food grains due to bad productivity in USA, Nixon embargo on soybeans export and the Arab oil crisis made Japan realise that its food supply line was susceptible. In nutshell, these incidents made Japan realize that its food supplies were not guaranteed but instead it was vulnerable to world market situations.

Having realised that importation of food from outside was not a permanent solution to secure a stable supply of food for its people, the Japanese government came up with various agricultural policies to improve and strengthen its agricultural sector and increase self-sufficiency ratio.

The various policies can be summarised as follows:

1. The Food Control Law of 1942: The Food Control Law was originally designed to control food distribution during the war, when food was in short supply. After the war, agricultural and non-agricultural economies were reconstructed, and the food supply recovered. The Food Control Law was adjusted to account for the increasing food supply and worked to support agricultural producers. The high support price stimulated an expansion of domestic production in excess of consumption, resulting in an accumulation of surplus rice in government storage, which made the adoption of an acreage-control program in 1969 inevitable.

2. Agricultural Basic Law of 1961: In the course of economic development that followed Japan's post-war recovery, farmers' incomes tended to lag behind those of urban workers. In an attempt to prevent the rural-urban income gap from widening, the Agricultural Basic Law was enacted in 1961. The law declared that it was the government's responsibility to raise agricultural productivity and thereby close the gap in income and welfare between farm and non-farm people mainly through price support measures and through reform of the structure of the agriculture by encouraging farmers who had decided to pursue other professions to sell their lands so that large scale farming becomes possible.

3. New Food Law 1995: This law led to the abolishment of the old Food Control Law of 1942. As per the law the government was no more to control production, distribution, supply and price of the commodity. The producers were free to sell

their product either to the wholesaler or to the consumer directly. This law removed the rigid government controlled system that existed in Japanese agriculture sector.

4. New Basic Law on Food, Agriculture and Rural Areas 1999: There was a pressure to reform agriculture policies so that it becomes at par with the Uruguay Round Agreement on Agriculture negotiations and also to meet the pressures from other countries, which was forcing Japan to liberalise the agricultural market, it enacted The New Basic Law on Food, Agriculture and Rural Areas in 1999. This law replaced the Agriculture Basic Law of 1961. This new law was the paradigm shift in the agriculture policies of Japan and it widened the scope of agricultural policy objectives to include food security by ensuring stable supply of food, multi-functionality of agriculture, sustainable development of agriculture and promotion of rural development. Moreover, this plan promoted food-self sufficiency ratio to be raised and it set up a target of 45 percent to be achieved by 2010.

4) New Basic Plan (2005): Due to the failure of the New Basic Plan enacted in 1999 to achieve the 45 percent target of food self-sufficiency ratio, Japanese government enacted New Basic Plan in 2005 to raise the food self sufficiency ratio to 45 per cent by 2015.

Despite various agriculture policies, agriculture productivity continues to fall and Japan has become dependent on imported food. This has led to overall decline in the self-sufficiency ratio. Hence, for Japan food security means increasing food self-sufficiency ratio through the increase in domestic agricultural production.

1.1 LITERATURE REVIEW

Food Security

Food security has become a central concern to the entire world. The ability of agriculture to support growing population has been a concern for generations and continues to be high on the global policy agenda (Rosegrant and Cline 2003). Shaw (2007) says that in the past, efforts to ensure food security have centred on strategies that increased food production, particularly in the developing countries, stabilizing food supplies, using the food surpluses of developed countries constructively and creatively, creating world and national food reserves and stimulating world agriculture trade. But after the International Labour Organisation

(ILO) World Employment Conference of 1976, with its concept of “basic needs”, and the work of Amartya Sen and his concept of ‘food entitlement’, led to an understanding and acceptance of the importance of assuring the access of the hungry poor to the food they needed through increasing employment and purchasing power, thereby moving the concept of food security out from a purely agricultural sector concern into broader arena of poverty and development problems.

According to scholars like Woolverton, Regmi and Tutwiler (2010), growth in agricultural productivity is already lagging globally and then the increasing threats that the world is experiencing from climate change, scarce water supplies, and competition for energy resources from industry and urbanization, and growing global populations are expected to create additional pressure on the world’s food supply. In addition Greenland (2005) says that food security has been a problem of concern to humanity from the beginning of time and current debates on world food security have been focused on environmental problems. Thus, food security has become the concern of the entire world.

Dietary Pattern and Food Security in Japan

Change in dietary pattern from traditional to western pattern took place as income of the people increased due to rapid growth of the Japanese economy. This led to higher consumption of meat, wheat, dairy and other traditionally consumed food items and at the same time consumption of rice the most important staple food also declined. Consequently, the self-sufficiency ratio declined as well as Japan became dependent on imported food to meet the consumption of the people. Smil and Kobayashi (2012) in their book titled “*Japan’s Dietary Transition and its Impact*” opines that the dietary transition took place slowly from the Meiji period (1868-1912) but the transition made great advances from the mid 1950s and it has helped Japan to achieve an enviable demographic primacy with the highest life expectancy in the world. Further, they opine that the transition and the achievement has had two important impacts first, it made Japan dependent on imports and second consequences on environment. Analysing the impact they point out that due to imports self-sufficiency ratio has declined and low domestic agriculture production has further lowered the ratio, also the environment is affected at both the domestic

and global front (exporting countries). Gadda and Gasparato (2010) in their research article titled “*Japan Drifts from Seafood to Meat Eating*” states that due to change in the diet pattern, the Japanese people are consuming more meat than seafood. And this has a major impact on the self-sufficiency ratio of Japan as well as on the environment of both domestic and exporting countries.

Similarly, Kako (2012) points out that the drastic change of dietary habits under the rapid economic growth led to the decline in the consumption of rice and the sharp appreciation of the yen against the US dollar which led to rise in imports due to fall in price of the imported items were the major causes of the sharp decline of the food self-sufficiency ratio creating anxiety about food security in Japan. Thus, he concludes by saying that epoch making efforts or events will be needed to achieve the target of improving the food self-sufficiency ratio. Hasegawa (2010) states that apart from shifting away from the local domestic production and being heavily dependent on imported food, change in eating habits of the Japanese people has been one of the biggest factors for the long decline of self-sufficiency rate in Japan. In nut shell change in dietary pattern has not only made Japan dependent on imported food but has also led to decline in food self-sufficiency ratio.

Agriculture Policies and Food Security

Agriculture productivity in Japan declined since the high economic growth period of 1960s. Factors like availability of limited land, declining farming population, existence of small-sized farms, growth of part-time farmers and decline of full-time farmers and ageing farmers contributed to the fall in the productivity of agriculture in Japan. Therefore, to solve the problems associated with the agriculture sector and increase the self-sufficiency ratio so as to ensure food security the Japanese government enacted agriculture policies.

Sheppard and Beun (1980) points out that the self-sufficiency rate declined in Japan mainly because of the change in demand for food and due to low domestic production also the consequence was that Japan became reliant to imported food. However, initially the objective of the agriculture policy was to raise the farm incomes through high farm products prices and increase self-sufficiency rate of food mainly rice. But the events of 1970s like the rise in prices of the food grains

due to bad productivity in USA, Nixon embargo on soybeans and Arab oil embargo made Japan shift its agriculture policy towards achieving greater self-sufficiency in food.

Kihl(1982) opines that the objectives of the agriculture policy in Japan has been to achieve self-sufficiency in food production primarily rice, reduce the income gap between the agriculture and non-agriculture workers and lastly to shift the production from rice to other crops. He further states that it is the farmers that have emerged as the beneficiaries of the agriculture policies in Japan. Similarly, Gorham (1979) holds the view that the major policy objective of Japanese agriculture policy is Japan's desire for some reasonable degree of food security. Further, states that the agriculture policy in the process of fulfilling its objectives instead has turned out to provide support to the farmers and protection to the domestic market from exporting countries and this has caused food to be very expensive in Japan. And concludes by suggesting an alternative strategy of stockpiling of food in order to ensure food security and it will also reduce the price of food in Japan.

Sears (2001) in his article titled "*Carrot, Sticks and Rice: Japan's Quest for Food Security*" highlights that due to rise in real income of the people their dietary pattern changed into western pattern and the domestic farmers being incompetent to meet the demands of the western style food has compelled Japan to be heavily import-dependent. He points out that imports being the supply line, it is vulnerable and exposed to risk caused by factors like, transport interruption, long term disequilibrium between supply and demand, poor world harvest and politically motivated embargos apart from the effects of climate change.

Therefore, he further opines that although Japanese food policy is highly protectionist and focuses on increasing the farmers' income and lowering the consumer price, yet for food security Japan needs to do partial reworking of its post war agriculture policies. He concludes by giving various alternatives to help Japan ensure food security but argues that such alternatives will only help Japan on short term basis and for long term basis Japan has to revert to traditional dietary pattern. Thus, the agriculture policy in Japan has mainly focused on improving farm incomes and increasing self- sufficiency of food.

Agriculture and Politics

Agriculture policies were enacted with the view of increasing the farm incomes and reforming the agriculture structure so that the domestic-productivity increases as a result there would be an increase in self-sufficiency rate. Although, the farm incomes increased but the reforming of agriculture was unsuccessful and instead it led to rise in part-time farmers having propensity of rice farming. Further, the agriculture policies provided support and protection to farmers particularly the rice farmers. However, the support and protection system and the rise of part-time farmers was the most important hindrance on the growth of domestic agriculture as it did not allow the restructuring of the agriculture sector, thereby adding to the decline in self-sufficiency rate.

Despite this fact the support and protection system provided by agriculture policies continues to exist mainly because of the political nexus that exist among the farmers, agriculture cooperatives, Ministry of Agriculture Forestry and Fishery (MAFF) and the ruling party (Liberal Democratic Party). The farmers particularly the part-time farmers are largest voting bloc in Japan's electoral system and they play a significant role in the formation of the government therefore, they have a strong relationship with the policy makers and the government.

Mulgan (2000), in her analysis found out that farmers in Japan wield great political power mainly because farmers are well mobilised across a spectrum of groups and unify themselves into a single universal system of agricultural co-operatives. Further, they have been a potent political constituency as they form a coherent voting block in an electoral system. Further, they have also secured the loyalties of large number of diet politicians because the pre-dominant ruling party has been electorally indebted to farm voters and farm organisation. Moreover, the presence of agricultural cooperatives, that is, Japan Agriculture (JA Group) cooperatives, in the Japanese countryside are ubiquitous. These agriculture cooperatives play a very comprehensive role in shaping farm politics, the rural economy and society.

Therefore, she opines that agriculture is highly politicised industry in Japan and the agricultural policies are the quintessential expressions of political power of Japanese farmers. The farm sector has been far more politically important than the

contribution of agriculture to the national economy and as a result of this the farmers have been under political umbrella and administrative regulation throughout most of the post war period.

According to Godo(2001), in Japan there exists a relationship among farmers, politicians, the Ministry of Agriculture Fishery and Forestry (MAFF) and *Nokyo*², and all parties mutually benefit from this relationship. He elaborates this claim by saying small scale farmers are in majority and they form a voting bloc which is essential for the small scale farmers in terms of ensuring their vested interest of not allowing to convert their lands into large farms, otherwise that have to give up all the benefits that they enjoy from it, such as paying less tax on property, subsidised rate loans and so forth.

For the politicians it is essential to see that the interest of the farmers are guaranteed and protected while enacting agricultural policies so as to retain the electoral support of the farmers and to stay in power. For the MAFF in order to maintain large personnel and to get the budget required, they need to support the politicians and to do that the MAFF while implementing the agricultural policies take into account the interests of the farmers.

And, finally the Japanese agricultural cooperatives organisation known as *Nokyo* plays a pivotal role in the agricultural sector and is one of the most politically powerful organisations in Japanese politics. *Nokyo* being a highly organised association has been able to gather votes for the politicians. For the MAFF, it helps to maintain small scale farming structure and often functions as a de-facto sub-governmental body that helps MAFF to make policy and enforce it. In case of farmers *Nokyo* sees that the farmers' interests are protected and also provides services such as supplying farm inputs and distributing agricultural products. It is also an important source of employment in rural areas.

Garbal (2005), holds similar view and says that in Japan the relationship that exist between *Nokyo*, bureaucracy (that being MAFF) and the LDP who has been in power almost all the time from 1955 on, has been referred to an Iron Triangle based

² *Nokyo* is a nationwide cooperative organisation of farmers established as per the Agriculture Cooperative Law of 1947.

on their strong links and their shared vested interest. Further, he writes that in Japan most agricultural policies are adopted only after a lengthy process of consensus seeking by the politicians from the other members of the triangle.

Yoshikawa (2010), holds the view that agriculture in Japan suffers from a wide range of problems, including low food self- sufficiency rate. He says that the root cause of Japan's agricultural problems is the inflexible farmland market that exists in Japan and such inflexible farmland market is mainly because of the Iron Triangle of collusion of LDP, MAFF and JA that exists in the agricultural sector of Japan.

Importation of Food

After 1960 onwards transition in dietary pattern and domestic agriculture sector was not only low but was not able to provide the western pattern food as a result Japan was compelled to import. Further, the comparative advantage of agriculture and its share to the economy began to decline therefore; Japan began to provide protection to its declining sector. Over the years Japan's level of agricultural protection compared to other countries began to increase rapidly and became highest among the countries in the world. Moreover, food exporting countries began to demand liberalization of Japanese agricultural market and to reduce its high level of protection so that free trade could flourish. Due to the pressure from the trading partners Japan opened her agricultural market through bilateral agreements but only to a limited extent. And it was only after the Uruguay Round Agreement on Agriculture (URAA), 1995 that Japan took steps to reduce trade distorting domestic subsidies and to increase market access in order to allow liberalization of market. Overall, Japan did make necessary changes to implement the agreement on agriculture but still Japan did not open the agriculture market fully and did not allow free trade to flourish.

Sanderson (1978) states that due to change in dietary pattern and the changes in the composition of agricultural output as well change in the structure of agriculture has compelled Japan to be enormously dependent on imported food to meet the demands of the people. At the same time Japan used costly price support policy not only to protect its agriculture but also to increase the productivity of agriculture. However, this has only lead to plenitude of rice and for other food items Japan still had to depend on imported food. And with time the importation of food has

increased and in future it is likely to increase further. Therefore, Sanderson opines that the only optimum way for Japan to secure its food supply is through international arrangements for trade in food.

Honma (1993) holds the view that Japan's policymakers should substantially decrease agricultural protection level, in order to avoid progressive decay under increasing foreign pressure and to harmonize agricultural policies internationally while seeking economic prosperity based on freer trade with international cooperation. Similarly, Christina Davis and Jennifer Oh (2007) writes that although, Japan has taken positive steps towards market reforms relative to the past, it still lags behind from an international perspective.

Scholars like Bull and Roberts (2001), says that in spite of high level of protection of the agriculture sector in Japan, the sector's contribution to the Japanese economy has been in decline for many years. Furthermore, they opine that if the Japanese economy is to realise the potential gains of further liberalisation of the agricultural trade then it is very important that the impediments to true market related reforms are addressed and that the policy induced distortions to agricultural production, trade and prices are substantially reduced.

Honma (2000), says that Japan has been using non-trade concerns such as importance of multi-functionality of agriculture and importance of food security as an excuse to provide and maintain border measures to protect farmers. Honma opines a compromise is needed between trade and non-trade concerns. Thus, subsidies for agricultural activities are more suitable policies and may provide a better way of meeting multi-functionality goals, rather than the wide-spread protection of farming leading to obstruction of further liberalisation in agricultural trade.

Yamashita (2006), opines that rather than simply continuing with business as usual in agricultural policy and waiting for the demise of Japanese agriculture, Japan could do worse than to take a gamble on structural reform in the shape of direct payments.

Jones and Kimura (2013), says that over the last five decades the problems of Japanese agriculture in particular are low productivity and the prevalence of part-time farmers and small plots. However, the high level and distortionary nature of

agricultural support, delay to shift to measures decoupled from production have not only imposed burden on consumers and tax payers but it has also undermined the dynamism of agriculture and its potential growth. Continued failure to implement necessary reforms threatens the future of the agricultural sector. Therefore, in the absence of fundamental reform, the agricultural sector will continue to wither, trapped in a cycle of low productivity, low earnings and dependence on subsidies and import protection. Furthermore they hold the view that the time for reform is now and a more open and market-oriented sector would also facilitate participation in comprehensive regional and bilateral trade agreements.

Thus, from the above discussion it can be concluded that Japan after 1995 enacted agricultural policies in order to comply with Uruguay Round Agreement on Agriculture (URAA) and WTO guidelines but the scholars still argue that Japan has not worked done sufficiently to open up its agricultural markets to the outside world. Still Japan agriculture sector is highly protected and Japan uses various methods such as 'standardization' of food items, quality of food items and so forth to restrict imports of food in the country.

1.2 RATIONAL AND SCOPE OF THE STUDY

Food is essential for the survival of humans. In a highly developed country like Japan only 39 per cent of the calories consumed come from domestic production and the rest 61 per cent is imported. The dwindling state of agriculture has resulted in falling production of food and increasing imports. Given the volatile nature of international food prices, increasing food imports is not good for Japan especially today when the country faces sluggish economic performance. Moreover, the world itself is engulfed with the problem of food security due to less agricultural production on account of growing population in developing countries, climate change, increase in food prices, conversion of farmlands into non-farms and diversification of uses of farm products such as for bio-fuel production. Such challenges further threaten the food supply line of Japan, thereby making Japan more vulnerable to any external changes in agricultural market.

Japan is not the only country to provide high level of protection to its declining agriculture sector, countries like US and European countries have also provided protection to their agricultural sector. But in case of Japan despite high level of

protection, imports have increased sharply and food self sufficiency ratio has declined further. In case of other countries like US and European countries high level of protection has resulted in increase in agricultural production, excess of agricultural commodities and high level of food self-sufficiency ratio. It is this contradictory outcome in Japan which is addressed in this research by looking at the government policies of Japan. The existing literature does not delve adequately into the implications that the various government policies have had on the food security scenario of Japan and this is the gap that this research work will undertake and draw some conclusions.

Thus, food security is of paramount importance to Japan and it is worth examining and analysing the various reasons behind such a scenario in Japan with regard to food security. It is also important to examine the various steps/policies taken by the Japanese government to secure a stable supply of food for its people and at the same time examine the implications that these government policies have had on the food security scenario of the country. It is also worth exploring the alternatives available to Japan to ensure food security.

This research work will examine the food security scenario of Japan from 1995 to 2013 mainly because it was only after the Uruguay Round Agreement on Agriculture (URAA), 1995 that Japan took steps to reform its agriculture policies in order to reduce trade distorting domestic subsidies and to increase market access in order to allow liberalization of agriculture market and import 4 per cent of the total consumption of rice from outside.

The scope of the study is that given that the share of Japan's agricultural sector has declined both in terms of GDP and the labour force, also the fact that it has relatively small agricultural land area, fewer full time farmers and ageing population, it is important to analyse the implications that the various policies of the government have had on the agricultural sector and necessary steps to be taken in order to evolve a strategy to improve this sector.

1.3 RESEARCH QUESTIONS

1) To what extent has the change in dietary pattern of Japanese people led to the problem of ensuring food security and what are the reasons behind such a shift?

- 2) Given such a change in the dietary pattern, what were the various steps taken by the government in ensuring food security and how successful has it been?
- 3) What were the impacts of various agricultural policies on enhancing agricultural productivity and ensuring food security in Japan?
- 4) How has politics influenced food security?
- 5) How importation of food led to the problem of ensuring food security in Japan.

1.4 HYPOTHESIS

- 1) Change in dietary pattern has aggravated the problem of food security in Japan.
- 2) Agriculture policies of Japan are effecting food security of Japan.
- 3) Agricultural politics is one of the causes for deterioration of food security in Japan
- 4) Importation of Food Items will ensure food security in Japan

1.5 RESEARCH METHODOLOGY

Deductive method shall be used for the proposed research. The research would be based on primary as well as on secondary sources of information. The study will look into data on Japanese food self-sufficiency ratio, food consumption data and import export data. The variables for this research are food security, dietary pattern, agriculture policies, agriculture politics and diversification of sources. In the study change in dietary pattern, agricultural policies and agricultural politics will be considered as the independent variables. Food security will be dependent variable. And diversification of sources will be intervening variable.

The main sources of data will be Ministry of Agriculture, Forestry and Fisheries (MAFF), Ministry of Finance, Japan and Food and Agricultural Organisation (FAO). The study will also refer to relevant books, journals, articles, newspaper reports and seminar papers. Internet sources will also be consulted.

1.6 ORGANISATION OF CHAPTERS

Chapter I

INTRODUCTION

This chapter outlines the background, definition of food security and deals with the debates at the academic level.

Chapter II

TRANSITION IN JAPANESE DIETARY PATTERN

This chapter has delved into the transition in the dietary pattern of Japan. In doing so it first gives the historical overview of the Japan's food and then analyses the food consumption pattern of traditional pattern and western pattern. It further examines the self-sufficiency ratio of all the traditional food items and western food items.

Chapter III

AGRICULTURAL POLICIES AND ITS IMPACT ON FOOD SECURITY

This chapter first gives an overview of the agrarian structure of Japan. Then analyses labour force in Agriculture, female and aging labourers in agriculture farm households, part-time farming and agriculture production in Japan. It further examines the agriculture policies in Japan and its impact on food security.

Chapter IV

AGRICULTURE AND POLITICS IN JAPAN

This chapter gives an overview of farmers in Japanese Agriculture. It analyses farmers' representation in politics in Japan. Further, this chapter delves into the role of Japan's agricultural cooperatives, MAFF and LDP and analyses the nexus of the agriculture and politics and its impact on agriculture sector

Chapter V

AGRICULTURE AND TRADE: IMPORTATION OF FOOD

This chapter gives a brief history of importation of food by Japan before Second World War and post war period and within the post war period also this chapter looks into the pattern of importation before and the signing of Agreement on Agriculture of Uruguay Round in 1995. Further, it examines and analyses the impact that the importation of food will have on the country's food security.

Chapter VI

CONCLUSION: Sums up the overall finding of the research and offers few comments about future options.

CHAPTER 2

TRANSITION IN JAPANESE DIETARY PATTERN

2.1. INTRODUCTION

Dietary transition is a universal phenomenon that occurs when societies are in the process of development and modernization. Dietary transition transforms the existing food consumption pattern and brings changes in the diet structure, where by people consume food that was not part of their traditional diet. Dietary transition as defined by Smil and Kobayashi (2012) is a gradual shift from traditional, pre-industrial diets dominated by plant foods to a new pattern of intakes that includes more animal foodstuffs, more fats, more sugar and a great variety of processed food.³ This new pattern of eating more animal meats, dairy products, eggs, fats, oils, sugar, bread and decline in traditional food dominated by rice and cereal grains, is called westernized diet.

The dietary transition in Japan started gradually since 1868, the Meiji Era (1868-1912), as Japan moved towards modernisation. But this transition process got accelerated from 1960s during Japan's high economic growth period, propelled by manufacturing industries. The economic prosperity brought in many important developments in the society. First, it led to the rise in per capita income of the people, which meant more money at disposal to spend on food. Second, it accelerated the process of urbanization, which led to diversification of lifestyles and dietary needs. Third, more number of women started working in the society. Lastly, large number of Japanese started travelling outside their country and this exposed them to variety of new cuisines.

Consequently, these developments changed the eating pattern of the people from ideal traditional diet to the western one. The traditional Japanese diet comprised of rice (main staple), fish (main dish and main source of protein), *miso* soup, pickles and side dishes made of seasoned vegetables. But as eating pattern changed, the

³ Vaclav, Smil and Kazuhiko, Kobayashi (2012), *Japan's Dietary Transition And Its Impacts*, Massachusetts, London, The MIT Press.

people started consuming protein rich foods such as animal meat, milk, dairy products and eggs that were western in nature, which traditionally were either not consumed, if done, then in very small quantity. This then increased the intake of sugar, oil, fats, variety of alcoholic beverages and coffee.

This significant change in the diet led to lower consumption of traditionally consumed food such as rice and vegetables, which was self-sufficient in the country. As diets changed with growing demand for westernized food and domestic agriculture not being able to cope with, Japan started importing. Consequently, importation of the food led to continuous decline of self-sufficiency ratio on calories basis. The food self-sufficiency ratio on calorie basis was 79 per cent in 1960 a decade later it dropped to 60 per cent in 1970, down by almost 20 percent. In 1990 it dropped below 50 per cent level falling to 48 per cent. Till 2000 it hovered around 40 per cent and in 2006 fell below 40 per cent, at 39 per cent--the lowest among major industrialized economies. After 2006 it has not made significant upward growth, such that in 2013 it remained at 39 per cent.

This change of the traditional diet to the western pattern, followed by sharp decline in the self-sufficiency ratio has aggravated the problem of food security in Japan. Today, food security in Japan relates not only to increasing the self-sufficiency ratio but it is also to cater to the new taste that the people have developed with the western food. This chapter will analyse this transition of the dietary pattern of Japan in depth.

2.2 HISTORICAL OVERVIEW OF JAPAN'S FOOD

During the aristocratic period (794–1185) Japanese people subsisted mainly on tubers (yams, lily bulbs, taro), various forms of millet⁴ and root crops. Rice cultivation was introduced in Japan in about third century BC and then rice became a new staple for the people. Rice became popular as it was far nutritious and tastier than other available food, but it was consumed only by those who could afford it.⁵ People who could not afford rice and those from the mountainous regions where

⁴ Ashkenazi Michael and Jacob Jeanne (2003), *Food Culture in Japan*, United States of America, Greenwood Press, Pg: 5.

⁵ *Ibid*, Pg: 16.

rice cultivation was not possible, subsisted on other staples like barley, millets and buckwheat. Mixtures of these grains (in the poorest regions and during famine years with hardly any rice included) were served in various ways (Smil and Kobayashi, 2012:11). Fish was the main source of protein, however common people ate fresh fish only on special occasions, likewise people from mountain region ate mostly salted fish. Vegetables constituted an important part of the meal and were consumed either boiled or pickled and served with rice or other staples. Fermented soybean paste (*Miso*) an original Chinese flavouring entered Japan via Korea during this period and became an important flavouring agent. After its introduction, it became an important component of Japanese meals and till today it continues to be a vital part of the meal.

The middle age in Japan started with the fall of aristocracy and rise of warrior class called samurais, who ruled Japan until the ranks were abolished in 1868.⁶ During this period rice was grown to pay taxes to the warlords and it became scarce. The peasants and the poor people lived on mixtures of other available staples, but managed eating rice at least once in a day. The influential samurais, their families and small group of urban people consumed rice at least three times a day.

In the Edo period, farmers produced rice to supply the needs of the influential minority of military elites and urbanites (Cwierka (2005:418). Then with the introduction of sweet potato, potato, corn, squashes, spinach during the western presence in mid- sixteenth century, there were much more for most people. Miso became very popular and by sixteenth century it was available to all.

The modern period in Japan began from the Meji restoration, that is, 1868. During this period Japan opened to the West and major changes took place in the diet of the people, particularly the small urban westernizing elites who had emerged during this period. Opening to the West led to influx of foods from the west. The upper and upper-middle classes especially experimented with new menus, both at home and in restaurants (Bestor and Bestor, 2011: 15). Meat eating particularly beef was approved by the emperor himself, but it was only the urban elites who could afford

⁶ *Ibid*, Pg: 5.

it. However, an overwhelming majority of Japan's rural and small town population continued the frugal Japanese cuisine, whose norms were set during the thirteen generations of the Tokugawa period.⁷ Thus, it was from this period that the eating habits of the people began to change slowly.

It is the period of the rapid economic growth from when the change in dietary pattern advanced. Food items dominated by wheat products, meat, dairy products, milk and others began to be consumed by the people at faster rate. Though traditional meal centred on rice, fish, *miso* soup and side dishes were consumed, but as western style food consumption increased the traditional one saw a decline.

2.3 MAJOR FOOD ITEMS OF JAPANESE TRADITIONAL DIET

Rice, *miso* soup and side dishes made of vegetables and fish formed the complete traditional meal. Rice was the main staple and special item desired by all but it was only the feudal lord and elites that consumed rice three times a day. Other poor people subsisted either on mixture of rice with other grains or simply other grains. Soy bean paste was the main flavouring before shoyu sauce was used. Vegetables formed the side dishes and the consumption of vegetables depended on season. In addition fish was also part of side dishes. It was also a luxury item particularly fresh fish desired by all. Therefore, this section will delve into various traditional food items of traditional diet.

2.3.1 Rice

Japan symbolises rice as our food (Ohnuki-Tierney 1993: 4). Rice is the most important food in Japan. A full meal is defined as a meal with rice. Anything without rice is, by definition, not a meal (Ashkenazi and Jacob, 2003: 30). However, for the Japanese rice is not simply food to fill the stomach (Ohnuki-Tierney 1993: 29). It is deeply embedded in Japanese culture, religion and economy. Since ancient times rice is considered to have a close relationship with the deities and the ancient imperial system. The ancient Japanese imperial system was established on rice agriculture and the rice seed was given by one of the deities is widely accepted belief in Japan. Therefore, even today, not only the emperor but

⁷ Vaclav, Smil and Kazuhiko, Kobayashi (2012), *Japan's Dietary Transition And Its Impacts*, Massachusetts, The MIT Press, Pg: 10

the common people also offer new rice and the rice products to the deities. Moreover, on festive occasion rice and its various products are still offered to the deities and the ancestors.

Economically, rice became the basis of the Japanese economy since the medieval times and more profoundly since the early modern period. Rice came to be used as a form of currency to pay taxes by the peasants. Henceforth, the peasants and the poor people subsisted on other staples. Rice became the most valuable crop and the food item since then. Thus, still today rice is of great value and even the last single grain of rice is eaten.

In Japan the most preferred rice is the short grained rice called *Japonica*. Rice in Japan is simply boiled and eaten with side dishes or green tea poured over it. However, apart from food purpose, rice is also used for making sake and *miso* sauce, it is also used for making snacks like *onigiri* (rice ball wrapped in nori and filled with various ingredients), rice cakes (*mochi*), rice crackers (*sembei*, *arare*) and other food stuff.

Rice since its introduction in Japan in about third century BC (Sato, 2001: 92 and Ishige, 2011: 23) not only became the new staple for the Japanese people but within a short span of time it became the most preferred staple. However, it was consumed by only those who could afford it (Ashkenazi and Jacob, 2003: 16). During the medieval period (1185-1603) rice was grown and mainly used by the peasants to pay the land taxes to the warrior government. Therefore, it was mostly the warrior class people who ate rice on daily basis. While the peasants ate rice only during special occasions or on festival days and on normal days they either subsisted on other grains or on the mixture of rice with other grains.

During the early modern period (1603-1868) the shogunate introduced a new system of taxation based on rice productivity called *koku* (*koku* is about 180 litres of rice yielded). This new taxation made rice as the monetary unit and rice became the basis of the economy and finance (Sato 2011: 92). Peasants paid taxes in the form of rice and that they did not have enough rice for their families to eat, and were thus forced to mix vegetables into their rice, or to make millet or sweet potatoes their staple food (Ishige 2011: 81). In the towns, meanwhile, a cash economy existed and rice was sold in the markets, so even the poorest towns

people were able to eat rice as their staple (Ishige 2011: 81-82). Despite the fact that peasants did not eat rice on daily basis still rice was the main staple. In 1867 rice accounted for about 47 percent of main staple foodstuff, barley for about 28 per cent and other cereals for roughly 19 percent (Cited in Smil and Kobayashi, 2012: 13).

The Meiji restoration of 1868 not only led to the restoration of imperial rule of Japan but it also marked the beginning of the modern period in Japan. Soon after the restoration the emperor ordered for the modernization of Japan on western models in order to make Japan at par with the western countries. Modernization of Japan was to be done by reforming its legal and political system and industrializing its economy based on Western models (Cwiertka, 2005:17) and also by building a modern army based on conscription (Ishige, 2011:104). However, the newly established central government like the previous Tokugawa government controlled the agriculture production and most importantly rice.

But as the economy grew during the Meiji period (1868-1912) the number of people consuming rice on daily basis also increased. Further, the military draft (*chohei*) adopted by the Meiji government provided soldiers with daily meal of rice, from areas that relied on miscellaneous grains and, therefore, had not eaten rice as an everyday food (Ohnuki-Tierney 1993: 39). By virtue of their conscription, the sons of farmers and other lower-class households, enjoyed the new “luxury” of having rice three times a day (Cwiertka, 2005: 422). In addition the improved varieties of seed and the technology led to increase in rice production as well as number of people consuming rice also increased. Consumption surveys from the years 1870, 1880 and 1886 show that rice accounted for, respectively, about 50, 53 and 52 percent of all food energy (Cited in Smil and Kobayashi, 2012:17). In 1887 the share of rice was up to nearly 60 per cent of main staple foodstuff, barley down to 16 per cent, other cereals declined to less than 5 per cent, and potatoes made up the remainder (Cited in Smil and Kobayashi, 2012: 13).

Post Meiji period the increase in rice production and rise in economic well being further led to increase in consumption of rice. However, the rise in consumption of rice was only among the urban population. Farmers’ lives changed little during the Taish period (1912-1926) and peasant disturbances continued (Ohnuki-Tierney

1993: 39) leading to peasant uprising and rice riots. In fact peasants in rural area still subsisted on other staples or on mixture of rice with other grains and vegetables. This situation became worse when the supply of rice could not meet the demand of the expanding population between 1920- 1940 and thus, consumption of rice had declined.

Further, as Japan began mobilising people and resources for World War II most of the food supplies were controlled and reserved by the government through the introduction of staple food rationing system in 1942. The rationing system mostly affected the urban consumers. As war mobilization progressed the divide that had for centuries separated the rural and urban diet rapidly declined – urban citizens were forced to rely increasingly on staples other than rice, which had thus far dominated peasants' fare (Cwiertka, 2005: 114). Therefore, the consumption of rice fell during war mobilization phase and during war, first, because rice was reserved in order to send it to the soldiers, second, shortage of farmers to work in the fields, third, in 1945 the country encountered the poorest rice crop in years (Cwiertka, 2005: 157) and lastly, the importation became impossible from the colonies due to the blockades imposed by allied forces. In 1920 the supply of unhusked rice (in per capita terms) had surpassed 160 kg, by 1940 it declined to 125 kg/ capita and in 1945 the supply at 80kg/capita was at near-starvation level (Smil and Kobayashi, 2012: 16). The supply further declined as the war progressed and by the end of war most of the people were hungry. However, in such circumstances the consumption of rice, the preferred staple, increased in the countryside (Cwiertka, 2005: 131).

Immediate post war period there was wide spread starvation and severe food crisis in Japan. The situation further deteriorated when more than six million military men and civilians who by 1948 had been repatriated from the colonies and occupied territories had to be fed (Cwiertka, 2005:133). Rice was the most eagerly desired food after the war, although, the supply of unhusked rice recovered to 120kg/capita from 80kg/ capita in 1945 (Smil and Kobayashi, 2012: 16) yet it was not sufficient to cater to the need of hungry Japanese. The situation only changed after the mid-1950s that the rice production began to increase and reach pre-war levels. From the same period there was an increase in the consumption of rice. Average per capita consumption of rice, 320 to 330 grams per day before the war,

reached peaks of more than 360 grams per day in 1956 and 1959 (Smil and Kobayashi, 2012: 17).

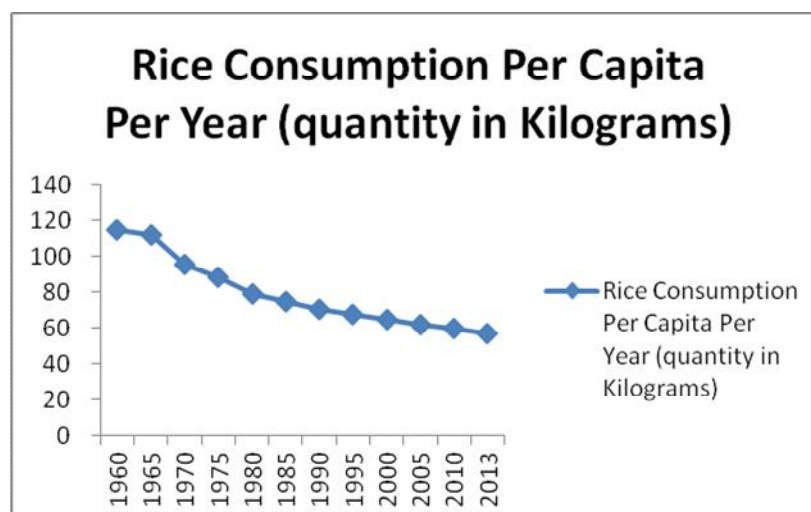
The high economic growth from 1960 propelled by heavy and export industries brought many changes in the diet of the Japanese people but most important change took place with respect to consumption of rice. In terms of rice consumption, one encounters a paradox: affluence radically reduced rice consumption (Ohnuki-Tierney 1993: 40). Rice has always been the most special food and the main staple for the Japanese and without rice a meal was considered an incomplete meal. But as the economy grew the Japanese people began to consume less amount of rice and instead began diversifying the side dishes. An influx of foreign dishes, including pizza and hamburgers, further contributed to the reduction in rice consumption (Ohnuki-Tierney 1993:16). Among urbanites rice consumption fell from three times a day to only once or twice a day (Ohnuki-Tierney 1993: 41) and among the rural people the decrease in rice consumption became acute. This can be seen from the given below Table 1 and Fig1, that rice consumption began to decrease from 1960.

Table 1: Rice Consumption Per Capita Per Year (quantity in kilograms)

Year	Rice Consumption Per Capita Per Year Quantity (in Kilograms)
1960	114.9
1965	111.7
1970	95.1
1975	88.0
1980	78.9
1985	74.6
1990	70.0
1995	67.8
2000	64.6
2005	61.4
2010	59.5
2013*	56.9

Source: MAFF. *2013 figures are approximate figures.

Figure 1: Rice Consumption Per Capita Per Year (quantity in kilograms)



Source: MAFF

From the above given Table 1 and Fig 1 it can be seen that the per capita rice consumption in 1960 was 114.9 kilograms per year and within a decade it dropped down to 95.1 kilograms per year in 1970. From the table and figure it can be seen that the fastest decline in the consumption is between 1965 and 1975. From 1975 the consumption has declined at a continuous and at slower rate without any interruption of sharp decline. In 2013 consumption of rice was 56.9 kilograms per year. A decline of almost half of what Japanese use to consume in 1960. Therefore, it can be said that from 1960 onwards the consumption of rice began to decrease and with changing taste, Japanese are consuming less amount of rice in their diets.

2.3.2 Soybeans

Soybeans are one of the central components of a Japanese meal. Soybeans, like rice, have been a staple of Japanese food culture since ancient times.⁸ Soybeans are said to have come to Japan from China during the eighth century (Smil and Kobayashi, 2012: 24). Shurtleff and Aoyagi (1979) opines that the transmission of soybeans from Northern China or Manchuria to Japan, via Korea, may have taken place sometime between the third and the eighth centuries, concurrent with the

⁸ United States Department of Agriculture (USDA) (2013), “*Japan Oilseeds and Products Annual*”, GAIN Report No: JA3011, USDA Foreign Agricultural Services

spread of Buddhism.⁹ Later in their work Shurtleff and Aoyagi(2014), by referring to the *Taiho Ritsuryo* (Taiho Law Codes) documents enacted by Emperor Monmu in 701 CE, which some regard as Japan's first constitution, opines that although the document does not specifically mention soybean cultivation, the soybeans used to make the various fermented soy products must have been grown in Japan. This document also contains the earliest date seen for soybeans in Japan, or (by inference) the cultivation of soybeans in Japan (A.D. 701).¹⁰ Similarly, Ishige (2011), opine that soybeans were cultivated in Japan before the rice cultivation was introduced in Japan, that is, in about third century.

Despite the controversy of its origin, soy beans did not take much time to become a significant and dominant source of high protein food in Japan. It came to be easily absorbed by the people of Japan mainly as a flavouring agent. Today, the soybean has become the king of the Japanese kitchen (Shurtleff and Aoyagi 1979: 62) and its importance in the Japanese diet is surpassed only by that of rice (Kiple and Ornelas, 1999: 1177).

In Japan soy beans are primarily used as processed foods such as *miso*, soy sauce, *natto*, *tofu*, soy milk, food oil and for feed. *Miso* (fermented soy bean paste) is a major ingredient in the soup that is central component of Japanese meal (Ashkenazi and Jacob, 2003, Pg: 31). Apart, from being a main ingredient in the soup, it is also used as a flavouring agent and as a pickling medium. *Natto* (fermented whole soybean) is sticky in nature and has a strong flavour and aroma. It is mainly consumed during breakfast and popular food in Japan. *Tofu* (soy bean curd) is one of the most widespread of the processed soy bean food in Japan (Kiple and Ornelas, 1999: 1178). It is considered as an alternative for meat because of high protein contents. After soy sauce, tofu is probably the best known of all the soybean's children outside Japan (Ashkenazi and Jacob, 2003: 41).

⁹ William, Shurtleff, & Akiko, Aoyagi (1979), *The Book of Tofu, Food for Mankind*, Volume 1, New York, Ballantine Books, Pg: 61.

¹⁰ William, Shurtleff & Akiko, Aoyagi (2014), *History of Soybeans And Soyfoods In Japan, And in Japanese Cookbooks And Restaurants Outside Japan (701 CC To 2014): Extensively Annotated Bibliography And Source Book*, USA, Soyinfo Center, Pg: 25.

Soy sauce is the most important flavouring agent in Japan. Soy sauce (*shoyu*) is of relatively recent advent in Japan (Ashkenazi and Jacob, 2003: 40) but before its production *miso* was mainly used as a flavouring agent. However, despite late entry compared to other soy bean products it is consumed on daily basis in fact on every meal. Soy milk has become a popular beverage among Japanese. It is either drank cold or hot. It is a rich source of calcium, vitamins and other elements. It is popularly known as vegetable milk. In Japan soy milk production began on small scale in 1954 and increased slowly during 1960s and 1970s (Smil and Kobayashi, 2012: 25).

Soy oil in Japan began in 1901 when Owada Seisakusho of Tsuruga, Fukui prefecture, Japan, starts making soy oil and soybean cakes using the press method (Shurtleff and Aoyagi, 2014: 8). However, overall demand for oil production increased dramatically from the 1960's as the Japanese diet shifted more toward western style cuisines that depend on heavier oil use.¹¹ In 1960 per capita consumption of soy oil was 1.2 kg/ person and in less than a decade the consumption was more than doubled reaching 3.2 kg person in 1969 (Shurtleff and Aoyagi 2014: 11). In 1982 the consumption reached to 5.1 kg/person (Shurtleff and Aoyagi 2014: 11), thus, the consumption of soy oil increased after 1960. Overall soy beans and its products are inseparable part of Japanese meal and cuisine. Indeed, the arrival of *tofu*, *miso*, and *shoyu* in Japan initiated a revolution in the national cuisine (Shurtleff and Aoyagi 1979: 62).

Despite the popularity and importance of soy foods in the Japanese diet, the consumption of soy beans has declined over the years. The per capita consumption of soy beans between 1934 and 1936 was 14.5 kilograms per year and within two decades that is in 1954 the per capita consumption was 10.4 kilograms per year. After 1954 there was steady increase in the consumption such that in 1958 per capita consumption was 14.5 kilograms per year at par with the pre war levels (Nakamura, 1961: 8-9). Further, the per capita soy beans consumption after 1960 is provided in Table 2 and Fig 2.

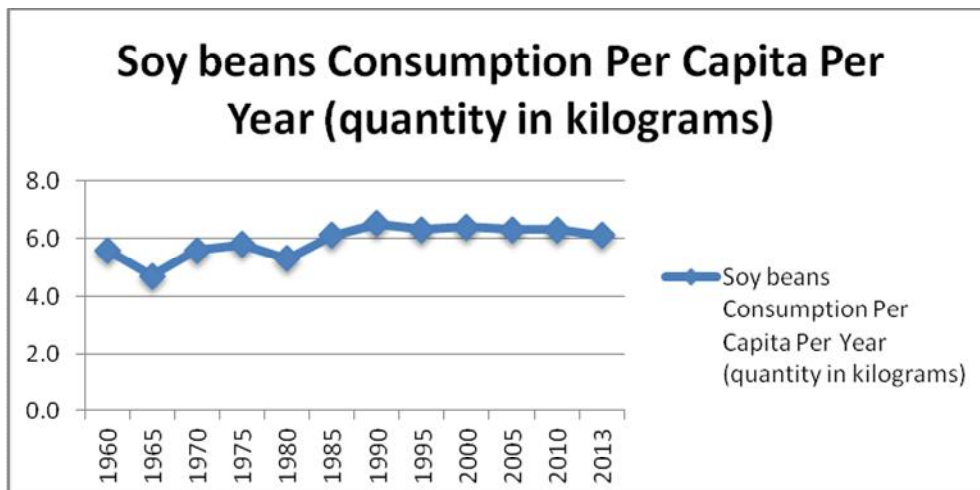
¹¹ United States Department of Agriculture (USDA) (2013), "*Japan Oilseeds and Products Annual*", GAIN Report No: JA3011, USDA Foreign Agricultural Services, Pg: 5.

Table 2: Soy beans Consumption Per Capita Per Year Quantity (in kilograms)

Year	Soy beans Consumption Per Capita Per Year Quantity (in kilograms)
1960	5.6
1965	4.7
1970	5.6
1975	5.8
1980	5.3
1985	6.1
1990	6.5
1995	6.3
2000	6.4
2005	6.3
2010	6.3
2013*	6.1

Source: MAFF. * 2013 figures are approximate figures.

Figure 2: Soybeans Consumption Per Capita Per Year Quantity (in Kilograms)



Source: MAFF.

From the Table 2 and Figure 2 it can be seen that in 1960 the per capita consumption was 5.6 kilograms per year but the per capita consumption rate declined in 1965 reaching 4.7 kilograms per year. Scholars hold the view that the transition to western diet was the main cause of the decline in consumption of soy beans and its products. 1970 onwards the per capita consumption surpassed the 1960 rate and by 1990 the per capita consumption was 6.5 kilograms per year. The benefits and advantage for the health was the main factor to increase the consumption level. But again in 1995 the consumption level had dropped and a minute increase in 2000 can be seen from Table 2 and Figure 2. But post 2000 the per capita consumption has been declining reaching the per capita consumption level of 6.1 kilograms per year. This decline is said to have been caused by the shrinking and ageing population, increase in single person household and rise in price of soy beans in the international market. Thus, the consumption of soybeans has slightly increased compared to the consumption level in 1960s. Knowing the fact that it is one of the important food items of the traditional meal, the consumption has declined if compared with pre-war and immediate war consumption rate.

2.3.3 Fishes, Shellfishes and Seaweeds

Fish and marine products have always been major food items (Ashkenazi and Jacob, 2003:3). Fish was consumed since ancient times and with the passage of time it not only became the central component of the Japanese meal but also one of the important pillars of the Japanese cuisine and culture. Japanese eat variety of fish and they eat in various ways such as boiled, deep fried, preserved fish, grilled and the most preferred is eating raw fish. Buddhist proscription on eating animal meat and similar philosophy promulgated by the indigenous Shinto religion was the main reason that made people to eat fish and seafood. Further, the various decrees issued by the emperors on prohibiting on eating animal meat based on Buddhist and Shinto philosophy as well as to protect the minimum available livestock was another important reason for the Japanese people to evade eating meat and to solely rely on fish and seafood for proteins.

Like rice fresh fish (both fresh river fish and sea fish) was also a luxury item, all the people did not have the luxury to eat fish on regular basis. For the people staying in

inland areas eating fresh sea or river fish was possible only on occasions. In the coastal areas poor people ate fish but on very minute quantities, it was only the upper class people who could afford it and in mountain areas fresh fish was rare and people only ate salted salmon on New Year or special occasion. By 1920s Japan had developed a strong international fishing industry with the capability to go for fishing on distant waters and by the 1930s, Japan had a fishing fleet twice the size of any other nation (Bestor, et.al.2014: 53). In addition as modern methods were developed for fishing and refrigerating both production and consumption of fish increased in Japan. In 1900 the total production (catch and aquaculture) was 1.6 Mt. and the average per capita consumption was 36kg per year and in 1925 the production increased to 2.9 and the consumption was 49 kg per year.¹² In 1935 the total production was 4.0 Mt but in 1945 it had declined and reached 1.8Mt. After the war fishery industry was one of the first industries revived under the Allied Occupation of Japan (1945–1952) (Cited in Bestor, et.al.2014: 54) and post war the total production and reached 3.4 Mt. in 1950 and the average per capita consumption was 40 kg per year (Vaclav and Kazuhiko 2012: 38).

Apart from fishes the Japanese eat various species of seaweed such as lavers, kelps, and true sea-weed either by wrapping it in *sushi* and *onigiri* or by adding to noodle dishes, to different soups and also by boiling it down in *shoyu*. The use of seaweed as food has been traced back to the fourth century in Japan (McHugh, 2003, pg: 1) and since then it has become an essential part of the Japanese food. Earlier, Japanese ate natural occurring seaweed but with Japan's progress the demand for seaweed also began to increase and to meet demands Japanese began cultivating seaweeds such that today a mixture of natural and cultivated seaweeds are supplied. The per capita consumption of fishes, shellfishes and seaweeds post 1960 can be seen from Table 3a, 3b and Figure 3a and 3b.

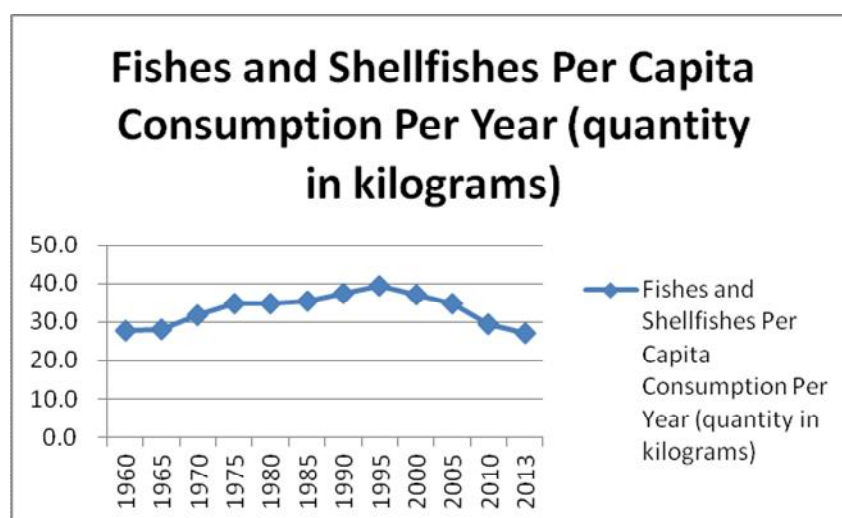
¹² Data source: Vaclav, Smil and Kazuhiko, Kobayashi (2012), *Japan's Dietary Transition And Its Impacts*, Massachusetts, The MIT Press, Pg: 38.

Table 3a: Fishes and Shellfishes Consumption Per Capita Per Year (quantity in kilograms)

Year	Fishes and Shellfishes Per Capita Consumption Per Year (quantity in kilograms)
1960	27.8
1965	28.1
1970	31.6
1975	34.9
1980	34.8
1985	35.3
1990	37.5
1995	39.3
2000	37.2
2005	34.6
2010	29.4
2013*	27.0

Source: MAFF. * 2013 figures are approximate figures

Figure 3a: Fishes and Shellfishes Consumption Per Capita Per Year (quantity in kilograms)



Source: MAFF

In 1960 the per capita consumption of fishes and shellfishes per year was 27.8 kg and as Japan's economy grew the consumption of fish also increased. By 1980 the per capita consumption per year was 34.8 kg and in 1995 the per capita consumption was the highest reaching 39.3 kg per year. Further from the Table 3a and Figure 3a it can be seen that after 2000 the per capita consumption for fishes and shellfishes has declined. In 2000 the per capita consumption was 37.2 kg per year and by 2013 the figure reached 27.0 kg less than what it was consumed in

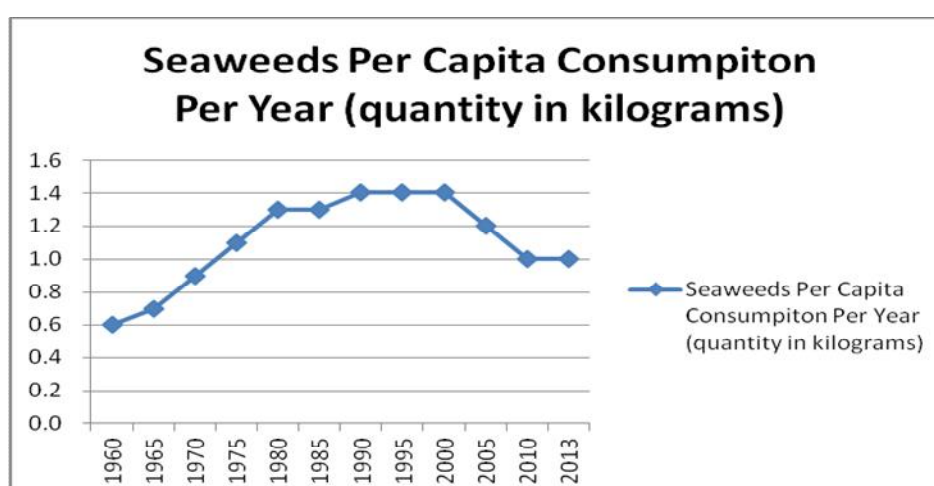
1960s. Various factors has been provided for the decline in the consumption of fishes and shellfishes such as change in the diet of the Japanese, consuming more meat, change in household structure, rise in price of the fishes and sluggish economic growth of Japan, time consuming process to prepare fish dishes and the current factor that has led to decline in the consumption of fishes and shellfishes is the dislike children have for the fish as compared to meat. Thus, in short the fish consumption has increased after 1960 but now it is in the declining trend.

Table 3b: Seaweeds Per Capita Consumption Per Year (quantity in Kilograms)

Year	Seaweeds Per Capita Consumption Per Year (quantity in kilograms)
1960	0.6
1965	0.7
1970	0.9
1975	1.1
1980	1.3
1985	1.3
1990	1.4
1995	1.4
2000	1.4
2005	1.2
2010	1.0
2013*	1.0

Source: MAFF. * 2013 figures are approximate figures

Figure 3b Seaweeds Consumption Per Capita Per Year (quantity in kilograms)



Source: MAFF.

From the Table 3b and Figure 3b it can be seen that in 1960 the per capita consumption of seaweeds were 0.6kilogram per year and by 1975 it reached 1.1kg surpassing a kilograms mark. Since 1975 the per capita consumption has increased and has remained consistent. However, post 2000 the per capita consumption dropped down by 0.2 grams and by 2013 it fell down to 1.0 kg.

2.3.3 Vegetables

Vegetables are of great importance to the Japanese people not only because it was one of the main side dishes of the traditional meal but also due to the fact that it was used by the poor people to subsist by mixing it with rice. The Buddhist proscription on eating animal meat and fish being a luxury item automatically conditioned people to consume vegetables for essential minerals, vitamins and fibres. Traditionally, vegetables were either pickled or boiled and then consumed as a side dish. Still today it is very popular among the Japanese to eat pickled vegetables either with the meal or while drinking *sake*.

Before the cultivation of millets, barley and rice Japanese consumed tubers, like yam and taro, and starchy roots such as lily bulb as their staple food. Limited variety of vegetables were known and grown by the Japanese farmers. But then the contacts with the Asian mainland particularly with China led to the introduction of variety of vegetables in Japan. The variety got expanded through the contacts with the Spaniards and Portuguese in the sixteenth century who introduced sweet potatoes, potatoes, pumpkin squash, and cayenne pepper.

Most profound introduction of vegetables took place in Japan during the Meiji period when the emperor decided to modernize Japan on western models. Western style cooking and food eating pattern was seen as part of the modernizing process, therefore, various vegetables like carrots, green peas, tomato, beetroot, onions, cauliflower, string beans, celery, cabbage, asparagus, parsley, etc were introduced and then produced. Further, during the same period the introduction of pumpkins, peppers and sweet corns by the American became very popular among the Japanese. Due to the increase in production the price of these vegetables declined and the Japanese began to use not only for western style food but also for the Japanese food. Thus, these new varieties of vegetable were cultivated and made indigenous and indispensable part of the Japanese meal.

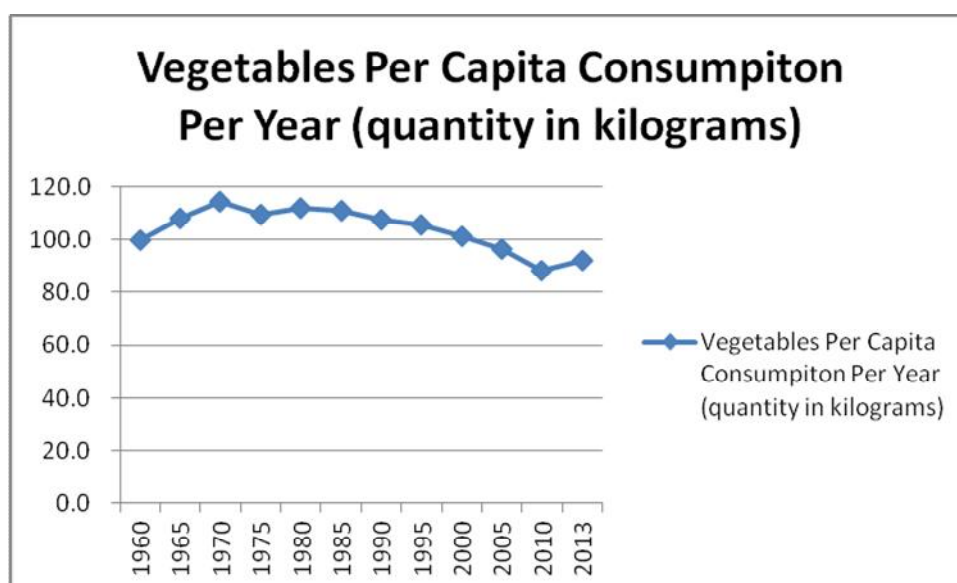
Today, Japanese cuisine relies heavily on vegetables (Ashkenazi and Jacob, 2003: 44). The per capita consumption of the vegetables can be seen for the given below Table 4 and Figure 4.

Table 4: Vegetables Per Capita Consumption Per Year (quantity in kilograms)

Year	Vegetables Per Capita Consumption Per Year (quantity in kilograms)
1960	99.7
1965	108.2
1970	114.2
1975	109.4
1980	112.0
1985	110.8
1990	107.8
1995	105.8
2000	101.5
2005	96.3
2010	88.1
2013*	92.3

Source: MAFF. * 2013 figures are approximate figures

Figure 4: Vegetables Per Capita Consumption Per Year (quantity in kilograms)



Source: MAFF.

From Table 4 and Figure 4 it can be seen that in 1960 per capita vegetables consumption was 99.7 kg per year and within a decade the consumption increased to 114.2 kg per year. In 1970 the consumption was maximum reaching 114.2 kg per year. Further, it can be seen that from 1970 onwards the per capita consumption has decreased continuously and in 2005 it has fallen below 100 kg mark falling down to 96.3 kg per year. 2010 was the steepest fall in the per capita consumption of vegetables and in 2013 the consumption has increased but it was below the 1960 consumption level.

2.4 WESTERNIZATION OF JAPAN'S DIETARY PATTERN

Japan's traditional diet pattern has undergone conspicuous and tremendous change over the last five decades. The traditional Japanese diet pattern was centered on consumption of traditional carbohydrates, such as barley, millets, buckwheat, wheat and rice, and consumption of legumes, tubers, vegetables and fish meat. The new changed diet pattern is centered on more consumption of wheat products instead of rice and other carbohydrate staples, increase in consumption of animal meats, dairy products, eggs, fats and oils, and sugar which were either not consumed at all or were consumed in minute quantity. Therefore, this new pattern of eating more animal meats, dairy products, eggs, fats, oils, sugar, bread and decline in traditional food dominated by rice and cereal grains is called westernized diet.

Although, the change in the traditional diet pattern of the Japanese people got accelerated after the 1960s miraculous economic growth but then the diet pattern was slowly influenced and changed since the sixteenth century when the Portuguese and Spanish arrived in Japan. They introduced new food crops such as sweet potatoes, maize and peppers. But their influence was more in terms of cooked food such as *Tempura*, meat cookery and the introduction of confection for making sweet baked and sponge cakes. *Tempura*, today one of the most typical foods of Japanese cuisine, was probably originally based on Portuguese cooking (Ishige 2011:74). In confection *kasutera*, it is a sweet sponge cake made with eggs and based on *bob de Castela*, Castilian cake and it was originally a Nagasaki speciality but is now made throughout the country. (Ishige 2011: 74) and is very popular amongst the people. In fact, the word, and indeed the confection, is of Spanish or Portuguese extraction (Ashkenazi and Jacob, 2003: 69).

Thus, besides *kasutera* there were other cakes that had Portuguese name and became extremely popular among the people.

The end of Edo period (1603-1868) and the Meiji period (1868-1912) gradually influenced and changed the diet pattern of the Japanese people. During the end of the Edo period the arrival of American ships commanded by Commodore Matthew C. Perry (1809-58) ended the policy of isolation followed by Japan. This incident compelled Japan to open its economy to the world. Following which it ushered in the modern period of Japanese history and also created wide-ranging changes in the Japanese diet (Ashkenazi and Jacob, 2003: 10). It was during this period that meat eating particularly beef eating became popular among the urban and merchant class of people. Further, numerous meat restaurants and snacks shops came into existence selling different kinds of food.

The gradual westernization of Japanese diet although limited to towns, cities and upper class, middle class and working class began with the formal restoration of the emperor's power in 1868. After the restoration, Emperor Meiji laid down the plan to modernise Japan on western lines so as to make Japan at par with western powers. This was to achieve through wide-ranging westernization in all areas from political to legal system and by industrializing its economy on western models. Therefore, in this process eating western food and dining in western style was an integral part of the modernising plan.

In order to familiarise and propagate the western style of food to the people many old existing norms were changed. Although, meat eating was prohibited in Japan since AD 675, the authorities promoted meat eating among the people by making an announcement that the Emperor Meiji consumes both beef and mutton on regular basis. Further, the Meiji government was continuously popularising the western vegetables and at the same time it was encouraging people to cultivate the western vegetables in their gardens.

However, westernization was not just limited to eating western food. The government also encouraged people in learning western dining etiquettes and using western eating utensil and dining furniture. Moreover, it also encouraged in wearing western style clothing and the first step was taken by the emperor himself such that in 1872 the emperor's traditional clothes were replaced by a swallow-tail

uniform fastened with hooks. The following year, his hair was cut and he grew a beard and moustache (Cited in Cwiertka, 2006: 23). Thus, the visual changes and the dietary changes of the emperor was an attempt to encourage people to adapt western life style including diet.

As part of the changes in consumption pattern of food numerous restaurants came into existence that served western cuisines. Many departmental stores were opened to cater to the demand for new food.

An important factor that has influenced the diet pattern of the Japanese people is the role of Japanese military during the Meiji period. To be at par with western countries a strong army was needed, thus conscription as a policy was introduced, leading to huge base of young military men. Although, the conscript consisted of soldiers from different parts of Japan a standardized nutritious military diet was needed so that all the soldiers are satisfied with the food provided to them. However, Japanese cuisine could not be standardized because at that point of time different region of Japan had different taste for same dish so a soldier of one region may not like the taste of a dish made by the cooks from another region. In order to solve this problem the military adopted for European dishes such as pasta, curry rice, deep fried meat items, beef meat items, stews and soups. Introduction of European cuisines in the military diet led to familiarization of taste of western dishes and the soldiers, when they returned to homes they were able to promote western food to families. Therefore, military diets also influenced the dietary pattern of the Japanese people by making them familiar with the taste of never tasted food before.

Immediately after the war a food crisis situation existed in Japan and to overcome the situation the occupiers mainly the Americans provided wheat flour, used for making breads, and skimmed milk powder mostly as lunch to children. Further, the occupiers brought with them a diet rich in dairy products, meat and animal fats of all kinds; this had a major impact on Japanese food consumption and tastes during the post war period (Bestor and Bestor, 2011:16).

The dietary transition got accelerated after the miraculous economic growth of 1960s propelled by manufacturing sector. High economic growth rate led to rise in employment and consequently rise in income of the people. Moreover, the

economic growth of Japan helped in reducing the gap that existed between the upper class people and other class people. Now even the middle and lower class people could purchase food items that were luxury in preceding periods. In addition it led to rapid urbanization and also brought unprecedented changes in the lifestyle of the people.

The most important change that took place was in the traditional meal of the people. Traditional meal in Japan was centered upon boiled rice as the main staple, *miso* soup and side dishes comprising of fish and vegetables. Although, rice was a luxury and special occasion item at earlier times but after 1960s the rise in income allowed almost all the people to purchase and consume rice on daily basis. Post economic growth the consumption of rice by the people declined and instead people started consuming more wheat products such as bread, spaghetti, noodles and pasta.

Moreover, in the traditional meal side dishes were either fish or seasoned vegetables but due to rise in income people focussed on diversifying the side dishes. Fish and seasoned vegetables were replaced by various animal meats, eggs, new variety of vegetables and dishes of foreign origin such as hamburger, soy-stewed chicken, rice curry, soy-simmered beef, potatoes and onions, breaded deep-fried pork cutlets and etc. The emphasis shifted from rice to side dishes. Today, there are three or more additional dishes (Ishige 2011: 118). Thus, the position of side dishes was shifting from that of complementing the rice-based meal to that of the centre of the meal, accompanied by rice (Cwiertka, 2006:158).

Post economic growth the consumption of fats and oils and dairy products, which were either not consumed at all or were consumed in minute quantities, also increased. These products in a short period of time became part of the daily menu at home as well as routine restaurant fare (Ishige 2011: 118). Thus, the traditional meal got diversified with the adoption of foreign dishes. In addition, the number of times the traditional meal is consumed also got reduced. Earlier, Japanese people use to eat traditional meal at least three times a day but then when foreign dishes became part of their daily menu people consumed traditional meal only once in a day. Therefore, economic growth not only changed the traditional diet pattern in Japan but it also created new diet pattern. The above discussion

throws light on the process through which Japan changed its dietary pattern. The following sections summaries the factors that led to the transition witnessed in very few nations.

2.5 FACTORS BEHIND THE DIETARY TRANSITION

Dietary transition in Japan although, it had first started since the sixteenth century with the arrivals of Portuguese and the Spanish, and got further influenced by the modernization process during the Meiji period but in both these period the transition was not widespread and had not influenced every food that was consumed during the said periods. It was only after the miraculous economic growth period that the transition in the diet became widespread touching all sections of the society and impacting all the food that was consumed traditionally as well as embracing new foods and making it part and parcel of daily menu of the people within a short period of time. Many factors exist and have contributed for rapid and widespread transition in the diet pattern of Japan after the economic growth and these factors are given below.

First and the most important was the rise in per capita income in Japan. The economic prosperity of Japan consequently led to rise in income of the people and this meant that Japanese had more money to spend on variety of food and to follow western style diet.

Second, the rapid economic growth also accelerated the process of urbanization in Japan. Urbanization and rise in per capita income brought many changes in the Japanese society such as diversifying the lifestyle of the people. Further, it changed the traditional family system by small nuclear family system. Urbanisation led to displacement of the people and often men started living alone at the work place. 'Quick fixed' meals was seen as an better option than the traditional time consuming cooking. The other new dimension was increase in number of working women in society. This meant that women had less time to prepare traditional meal since it was time consuming so mostly they would go out and eat in the variety of restaurants.

Consequently it led to a gradual decrease in the traditional scene of the family gathered around the table at meal time (Watanabe, 2005: 5). As it is popularly seen in developed countries in Japan too its development led too people eating out.

Third, emergence of super markets, convenient stores selling pre-prepared food played an influencing role in the transition of the diet patter of Japan. The pre-prepared food were usually western food and there easy availability on the shelves of super markets and convenient stores had most working men and women for sake of convenience switching to these food and consequently eating traditional meal was foregone for convenient packed western alternatives.

Fourth, introduction of McDonald, Kentucky Fried Chicken and other fast food stores overtook the traditional street food like noodles/ soba takao etc as their advertisement, the newness and glamorous outlet encouraged people to visit these outlets.

Fifth, due to affluence in the society, travelling among Japanese people has increased. Travelling has allowed the Japanese to experiment with new foods in different parts of the world and this has helped them to be acquainted with food from across different cultures. A decade back a revolution of sort happened in Japan, when one witnessed mushrooming of many restaurants offering Mexican, Lebanese, Indian and Moroccan cuisine. So, it is not only western food items but other culture's food has also seeped into Japanese dietary pattern.

Lastly as Japan moved to become a mature economy it faces new challenges of which aging population has emerged as a vital factor for impacting the diet pattern in Japan. The ageing population increasingly prefer pre-prepared food and western food has led to the decline in the demand for traditional food as making traditional meal is a tiresome process. While old people are the ones who prefer traditional food, the tiresome process of cooking traditional food as well as the difficulty of accessing ingredients has led them to eat western pre-prepared food.

2.6 NEW FOOD ITEMS IN JAPAN

The transition in the dietary habit led to decline in consumption of traditionally consumed foods and rapid increase in consumption of new foods such as wheat products, animal meats, eggs, milk, dairy products and alcohol beverages. Therefore, this section will look into new foodstuffs that led to change in the diet pattern of Japan.

2.6.1 Wheat

Wheat as one of the carbohydrate staples was cultivated in Japan before the introduction of rice. Wheat and other staples like barley and millets were consumed by the people before rice was introduced. However, even after the introduction of rice in Japan wheat and other staples were consumed by the poor people, as rice was used for paying taxes, and the people belonging to the mountainous region where rice cultivation was not possible. Wheat was never consumed as staple and as such its popularity was low. But wheat gained its popularity in Japan first when noodles were introduced from China and second, when bread as a food aid was given to Japan immediately after war.

Noodles are of two types in Japan one made of buckwheat (*soba*) and another made of wheat flour (*udon*). Buckwheat is not a grain at all, but the seed of a plant related to flax (Ashkenazi and Jacob, 2003: 37). Buckwheat noodles or *soba* is made of a mixture of 30 to 60 percent buckwheat, the rest being wheat flour (Ashkenazi and Jacob, 2003: 37). They were popular in the late Edo period and till today they remain a favourite food but their per capita consumption is less than a third of what it was nearly a century ago (Smil and Kobayashi, 2012: 19).

Wheat flour noodles or *udon* are one of the most popular noodles in Japan. There are varieties of *udon* noodles depending on the region. Their post war consumption expanded both due to more frequent choice of noodles at home and more noodle serving establishments offering inexpensive, fast, and filling noodle dishes (Smil and Kobayashi, 2012: 19). Apart from buckwheat and wheat flour noodles the Chinese noodles (*ramen*) are the most popular among the Japanese. They were not popular noodles before the World War II, it was only after the war that they became very popular amongst the Japanese people. Further, instant *ramen* that could be made in just three minutes made ramen very popular. Thus, noodles were important medium through which people got familiarised with wheat and started taking it in greater quantities.

Bread was another important food item that led to rise in consumption of wheat in Japan. Bread was introduced in Japan by the Portuguese in 1543 (Smil and Kobayashi, 2012: 21) but it could not make its way into the diets of the people. Gradual acceptance began only after the Meiji restoration (Smil and Kobayashi,

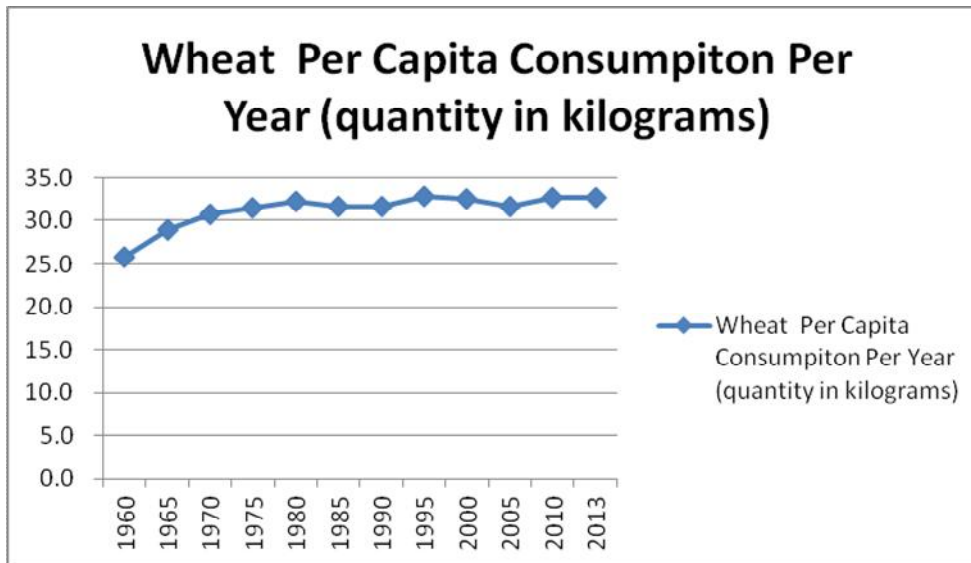
2012: 21) but still not widespread. Immediately, after the war there was a severe food crisis situation in Japan and to overcome the situation the occupiers provided bread by importing wheat flour from America. This helped in popularising bread among the Japanese after the war and it soon became the standard and regular food to be served during breakfast. Apart from noodles and breads there are other wheat based products such as pastas, buns, rolls and etc that has popularised wheat in Japan and has led to rise in consumption of the wheat. Therefore, wheat consumption is shown by Table 5 and Figure 5 given below.

Table 5: Wheat Per Capita Consumption Per Year (quantity in kilograms)

YEAR	Wheat Per Capita Consumption Per Year (quantity in kilograms)
1960	25.8
1965	29.0
1970	30.8
1975	31.5
1980	32.2
1985	31.7
1990	31.7
1995	32.8
2000	32.6
2005	31.7
2010	32.7
2013*	32.7

Source: MAFF. *2013 figures are approximate figures.

Figure: 5: Wheat Per Capita Consumption Per Year (quantity in kilograms)



Source: MAFF.

From Table 5 and Figure 5 it can be seen that in 1960 per capita consumption of wheat was 25.8 kg per year within a decade it reached to 30.8 kg per year. From 1970 onwards there has been further increase in consumption of wheat till 1980. After 1980 a slight decline in consumption can be and it exists until the consumption rises again in 1995. This slight decline is due higher consumption of animal products (Smil and Kobayashi, 2012: 22). In 1985 the per capita was 32.8 kg per year, in fact a slight rise can be seen until consumption again falls slightly in 2005. The slight rise from 1985 is mainly due to greater popularity of wheat based fast food, bread, pastries and etc (Smil and Kobayashi, 2012: 22). Further from the above given Table and Figure it can be seen that from 2010 the consumption has increased and by 2013 it was 32.7 kg per year. Overall, it can be seen that from 1960 the per capita consumption of wheat has increased continuously with slight declines, thus the consumption of wheat has increased.

2.6.2 Meat

Traditionally Japan was never a meat eating country. Though meat was introduced as an alternative it continued to be a rare inclusion in a Japanese meal. Consumption of meat was pushed by the Japanese military, however it did not get a precedence as availability was restricted to urban. Consumption of meat began to increase during post war period and it became a part of the daily meal as its availability increased and purchasing power of the people increased.

Eating animal meat was prohibited in Japan mainly due to the Buddhist philosophy against taking life. On the basis of Buddhist philosophy the first recorded decree prohibiting the eating of cattle, horses, dogs, monkeys, and chickens was issued by Emperor Temmu in A.D. 675 (Ishige, 1999: 1176). Similar decrees, based on the Buddhist prohibition of killing, were issued repeatedly by emperors during the eighth and ninth centuries (Ishige, 1999: 1176). In addition the proscription got further strengthened when the Japanese aboriginal religion, Shinto also prohibited killing and eating animal. However, it is said that besides Buddhist philosophy the main purposes of the ban were to prohibit the eating of beef and horse meat and protect the livestock population, as well as to prevent drought, insect damage and famine (Ishige, 2001: 48). Thus eating meat came to be prohibited.

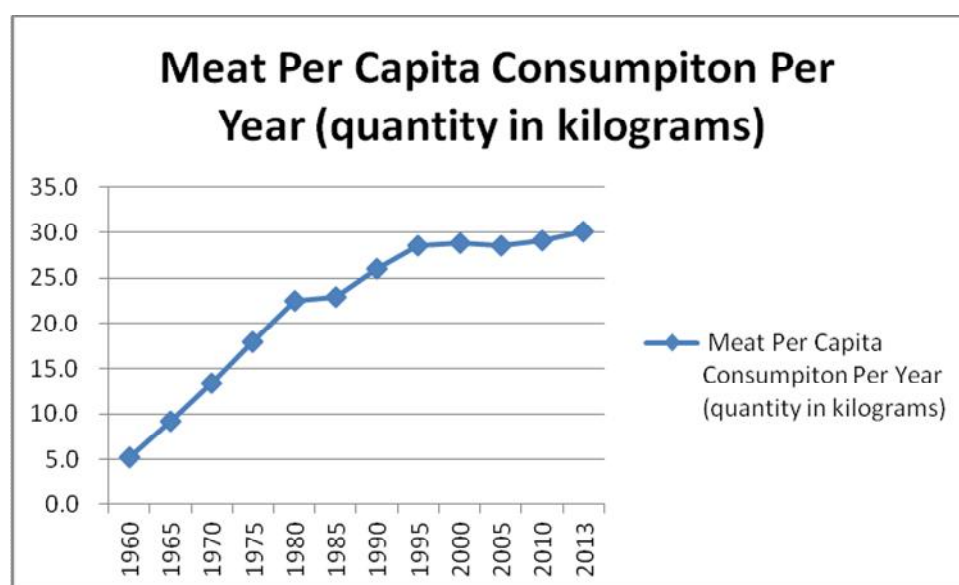
In the sixteenth century meat eating was reintroduced by Christian missionaries but it did not gain popularity and people abstained from eating meat. However, people ate meat in small amount for medicinal purpose but the practice of eating wild animals among the people still existed. After Japan opened its gates to the world eating meat was reintroduced but ban on eating meat was still in force thus, meat was not eaten by all. After Meiji restoration, in 1872 it was announced that the Meiji emperor was eating meat on regular basis (Smil and Kobayashi, 2012: 49). Further, eating meat was propagated as important part and parcel of the process of modernizing Japan. Meat eating was popularized during Meiji period and then onwards it was widely eaten. However, the popularization and consumption of meat increased during and after high economic growth period in Japan. To sum up, meat although, was popularized during Meiji period but it became very popular after 1960s economic growth period.

Table 6: Meat Per Capita Consumption Per Year (quantity in kilograms)

YEAR	Meat Per Capita Consumption Per Year (quantity in kilograms)
1960	5.2
1965	9.2
1970	13.4
1975	17.9
1980	22.5
1985	22.9
1990	26.0
1995	28.5
2000	28.8
2005	28.5
2010	29.1
2013*	30.1

Source: MAFF, *2013 figures are approximate figures.

Figure 6: Meat Per Capita Consumption Per Year (quantity in kilograms)



Source: MAFF.

From Table 6 and Figure 6 it can be seen that in 1960 the per capita consumption of meat was 5.2 kg per year and within a decade the consumption was more than double reaching 13.4 kg per year in 1970. In 1985 it was 22.9 kg and by 2013 it had reached 30.1 kg per year. Further from the given Table 6 and Figure 6 it can be seen that the consumption of meat tripled between 1960 and 1980. From 1985 onwards the increase is there but the increase has not even doubled. But looking

from 1960 the consumption has increased six times. Thus, it can be clearly seen that after 1960 there was rapid rise in consumption of meat.

2.6.3 Eggs

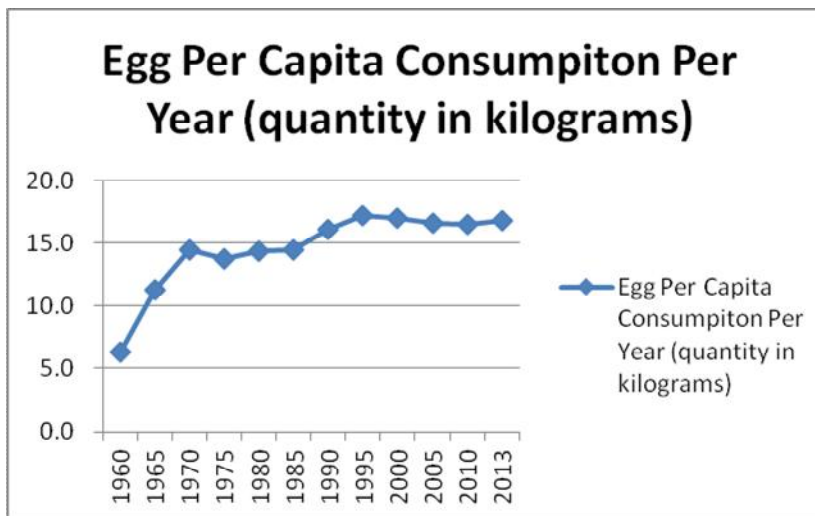
Eggs were not consumed widely in Japan mainly because of the prohibition on eating animal meat. However, eggs consumption began to make its first small inroads only after the fifteenth century, but it remained an insignificant source of high quality protein until after 1950 (Smil and Kobayashi, 2012: 54). Egg production data begin in 1906 when the output was just about 35,000 tonnes or 750 grams per capita, an equivalent of fifteen small eggs per year. By the late 1930s, per capita supply rose to one egg per week and in 1946 it reached fewer than two eggs per year (Smil and Kobayashi, 2012: 54). Egg consumption increased during and after the period of high economic growth in Japan and this can be seen from the given below Table 7 and Figure7.

Table 7: Eggs Per Capita Consumption Per Year (quantity in kilograms)

YEAR	Egg Per Capita Consumption Per Year (quantity in kilograms)
1960	6.3
1965	11.3
1970	14.5
1975	13.7
1980	14.3
1985	14.5
1990	16.1
1995	17.2
2000	17.0
2005	16.6
2010	16.5
2013*	16.8

Source: MAFF, *2013 figures are approximate figures.

Figure 7: Eggs Per Capita Consumption Per Year (quantity in kilograms)



Source: MAFF

From Table 7 and Figure 7 it can be seen that annual per capita consumption of egg more than doubled within a decade, from 6.3 kg to 14.5 kg. In 1975 there is a slight decline in egg consumption but from then onwards it has increased continuously till 2000 reaching annual consumption of 17kg. However, from 2005 till 2010 there is a slight decline in the consumption but then in 2013 the consumption has to 16.8. To sum up, it can be said after 1960 the consumption of eggs in Japan has increased continuously.

2.6.4: Milk and Dairy Products

Milk was never consumed in pre-modern Japan (Ashkenazi and Jacob, 2003:63) by the people mainly because Japanese agriculture did not include the systematic raising of livestock for meat and milk (Ishige, 2001: 50). It was consumed only on rare occasions for medicinal purpose for giving strength and protein to the sick person. However, during Meiji period milk was popularized and the then government encouraged people to drink milk. However, milk was mostly used by mothers to feed the new born babies and for consumption by the sick people. Immediately after the World War II the occupiers launched school lunch initiative in all schools. This lunch initiatives were to provide lunch based on bread and milk to children in order to strengthen the malnourished children. This initiative played an important role in popularising milk in Japan after 1960.

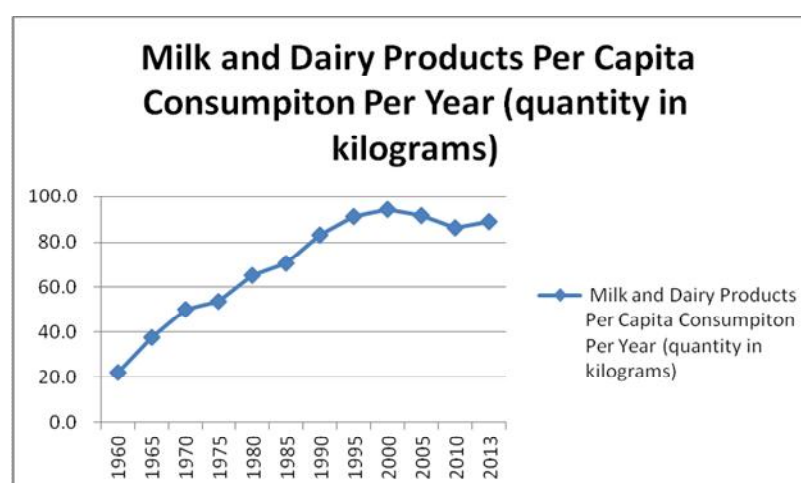
Today, milk and dairy products are essential part of daily diet of Japanese. Since World War II, however, milk products have become a staple of Japanese children's diets, and many younger adults retain a liking for these foods as well (Ashkenazi and Jacob, 2003:63), therefore, increase in consumption of milk and dairy products are shown in Table8 and Fig8.

Table 8: Milk and Dairy Products Per Capita Consumption Per Year (quantity in kilograms)

Year	Milk and Dairy Products Per Capita Consumption Per Year (quantity in kilograms)
1960	22.2
1965	37.5
1970	50.1
1975	53.6
1980	65.3
1985	70.6
1990	83.2
1995	91.2
2000	94.2
2005	91.8
2010	86.4
2013	89.0

Source: MAFF, *2013 figures are approximate figures.

Figure 8: Milk and Dairy Products Per Capita Consumption Per Year (quantity in kilograms)



Source: MAFF

From Table 8 and Figure 8 it is seen that in 1960 the annual per capita consumption of milk and dairy products was 22.2 kg and with a decade the consumption is more than double. In 1970 the consumption was 50.1kg and by 2000 the consumption is slightly less than 100 kg. However, from 2000 the annual per capita consumption was 94.2 kg and then onwards it has declined reaching 89kg. The decline is mainly because the aging and generally more health conscious population chose soy milk instead of cow milk. Thus, from the table 8 an figure 8 it can be seen that since 1960 there is a steep increase in the annual per capita consumption of milk and dairy products in Japan.

2.6.5 Fats and Oils

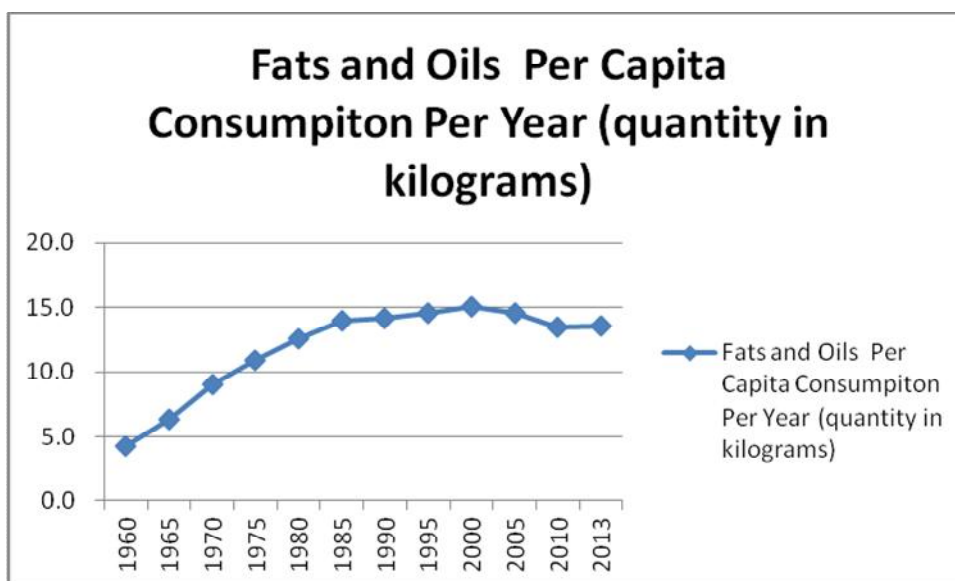
Animal fats and plant oils were rarely used in Japan. Fats and oils were mostly needed for side dishes but in Japanese traditional meal side dishes were either cooked, boiled or in case of fish it was served raw. The only fat they consumed was directly from eating fish. One of the important reasons for low consumption of fats and oils in Japan is prohibition on eating animal meats. Therefore, it was only after World War II the popularity of the fats and oils increased in Japan and after 1960 due to higher consumption of meat, influx of fast food chain stores the consumption of fats and oils has increased.

Table 9: Fats and Oils Per Capita Consumption Per Year (quantity in kilograms)

Year	Fats and Oils Per Capita Consumption Per Year (quantity in kilograms)
1960	4.3
1965	6.3
1970	9.0
1975	10.9
1980	12.6
1985	14.0
1990	14.2
1995	14.6
2000	15.1
2005	14.6
2010	13.5
2013*	13.6

Source: MAFF, *2013 figures are approximate figures.

‘Figure 9: Fats and Oils Per Capita Consumption Per Year (quantity in kilograms)



Source: MAFF

From Table 9 and Figure 9 it can be seen that the annual per capita consumption of fats and oils tripled between 1960 and 1980, from 4.3 kg to 12.6 kg. From 1980 onwards till 2000 the consumption has increased and in 2000 the consumption level has peaked reaching 15.1 kg. But after 2000 the consumption of fats and oils began falling and in 2013 it had fallen down to 13.6 kg from 15.1 kg in 2000. Despite this fall the consumption of fats and oils is higher than 1980 consumption level. Thus, it can be seen that the intakes of fats and oils since 1960 has tripled.

2.6 FOOD SELF SUFFICIENCY RATIO IN JAPAN

The food self sufficiency ratio in Japan is based on calories.¹³ The food self-sufficiency ratio on a calorie basis is an index that shows the ratio of calorie supplied from domestically produced food, compared to the total calorie supplied by food (Kako, 2010: 103). It is defined as follows: (Per capita daily calorie supply from domestically produced food ÷ per capita daily total calorie supply from food)×100 (Kako, 2010: 103). The food self sufficiency ratio in 1960 was 79 per cent and in 2013 it dropped down to 39 per cent. In 1960, 79 per cent of

¹³ The calculation in calories is carried out in advanced nations as access and affordability of food is never a question.

food was domestically supplied to meet the demands of the people and rest 21 per cent were imports. In 2013, only 39 per cent of food was domestically supplied and 61 per cent was from imports. Thus, Japan is only 39 per cent self-sufficient with respect to food.

The most important factor for such decline is the change in the dietary habit, from traditional to western, during the period of fast economic growth. Other factors are sharp appreciation of yen against the US dollar, the progress of agricultural trade liberalization (Kako, 2010: 103), dependence on imports, change in life style, increase in single households, increase in number of working women and ageing population.

All these factors can be attributed to such a decline in the self-sufficiency ratio.

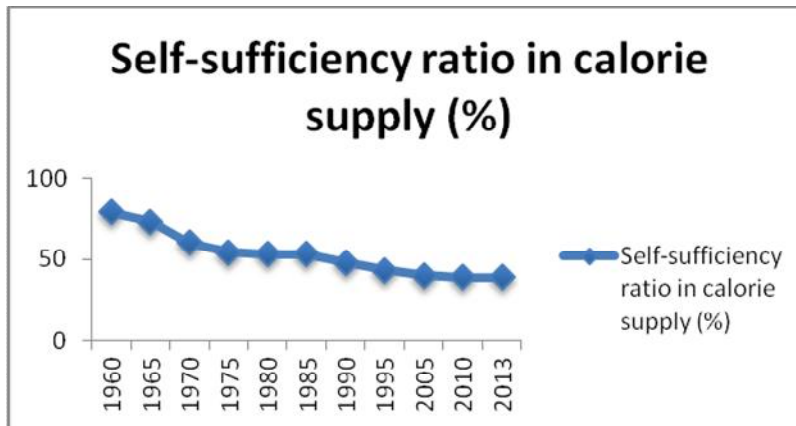
The rapid declining trend in food self-sufficiency ratio of Japan is shown in Table 10 and Figure 10.

Table 10: Food Self-Sufficiency Ratio (%)

Year	Self-sufficiency ratio in calorie supply (%)
1960	79
1965	73
1970	60
1975	54
1980	53
1985	53
1990	48
1995	43
2005	40
2010	39
2013*	39

Source: MAFF, *2013 figures are approximate figures.

Fig 10: Food Self-Sufficiency Ratio (%)



Source: MAFF

Table 10 and Fig 10 shows that the food self sufficiency ratio of Japan in 1960 was 79 per cent and with a decade, it had dropped down to 60 per cent in 1970, almost 20 per cent down. From 1970 onwards there is a continuous decline, however, from 1975 to 1985 the self-sufficiency ratio declined slightly, the drop was just 1 per cent. From 1985 to 2005 the self sufficiency ration dropped down by 20 percent. This fall is mainly due to two reasons, first the appreciation of yen against US dollar after the Plaza Agreement after 1985 led to higher value of yes so importing things became cheaper so importation of food was high, Second, the economic bubble burst of early 1990s led to decline in importation but the domestic agriculture was already in the declining state, therefore despite less imports still it was higher than domestic production and led to decline in food self sufficiency ration. In 2006 it fell below 40 per cent level dropping down to 39 per cent and from then onwards it has hovered around same level till 2013. Further, from the figure it can be seen that the greatest fall in the self sufficiency level is from 1960 to 1970 of almost 20 per cent. This period in Japan refers to period of high economic growth period. When the per capita income was high and people changed their eating habits. Thus, food self-sufficiency ratio in Japan has declined continuously over the last five decades.

2.7 SELF SUFFICIENCY RATIO OF FOOD (Traditional and Western)

The overall food self- sufficiency ratio of Japan has declined continuously over the last five decades and in 2013 it was 39 per cent. Besides other factors change in diet pattern of the Japanese, that is, from traditional to western pattern is said to be the

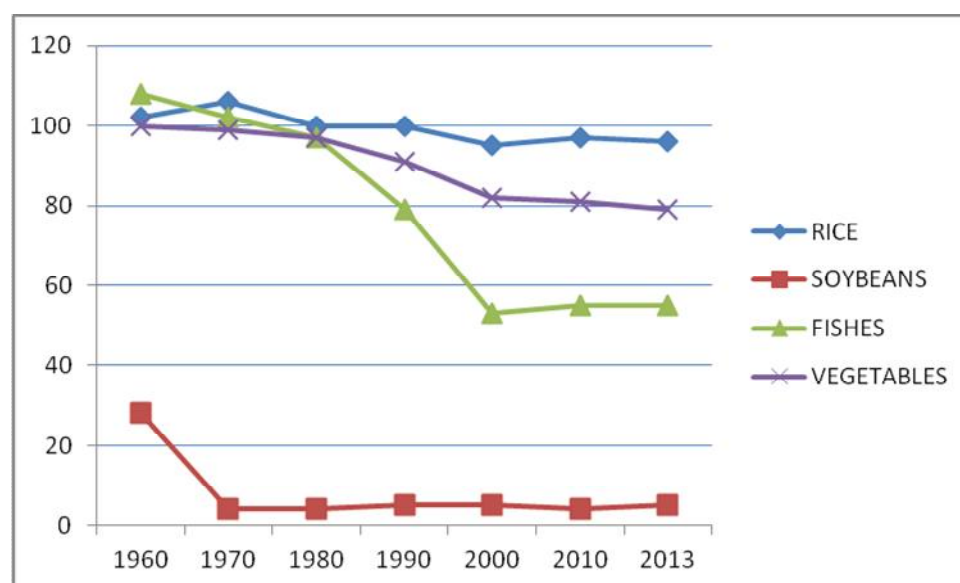
most important cause for decline in self-sufficiency pattern. Therefore, self-sufficiency of different food items are given in Table 11a and 11b and Figure 11a and 11b to get better picture.

Table 11a: Food Self-Sufficiency of Traditional Food (per cent)

YEAR	RICE	SOYBEANS	FISHES	VEGETABLES
1960	102	28	108	100
1970	106	4	102	99
1980	100	4	97	97
1990	100	5	79	91
2000	95	5	53	82
2010	97	4	55	81
2013*	96	5	55	79

Source: MAFF, *2013 figures are approximate figures.

Figure 11a: Food Self-Sufficiency of Traditional Food(per cent)



Source: MAFF

From Table 11a and Figure 11a it can be seen that rice which is the most important food in Japan had a self-sufficiency rate of 102 per cent in 1960 but in 1970 the rate has increased to 106 per cent. In 1980 the rate has declined and the rice diversion programme introduced by the Japanese government during the 1970s may be an important factor for the decline. The lowest decline in the rate can be seen in the year 2000 in which the rate has dropped to 95 per cent, however after a slight increase in 2010 the rate in 2013 has declined again.

Soybeans in the form of *miso* soup, *natto* are important components of the Japanese traditional meal, without them the meal would be incomplete. Besides the above mentioned form, soybeans are also consumed in the form of soy milk, food oil, *tofu* as it is a significant source of protein in Japan. Moreover, it is also used as feed for the domestic meat industry. Thus, from the Table 11a and Figure 11a it can be seen that in 1960 the self-sufficiency rate was 28 per cent and from 1970 the rate has declined sharply reaching single figure and in 2013 it was just 5 per cent. Further from the table it can be noticed that Japan was very less self-sufficient in soy beans from 1960 only.

Fish was the main source of the protein for the Japanese people since ancient times. It not only formed the important part of the traditional but it was also one of the most significant pillars of the Japanese cuisine and culture. Therefore, from Table 11a and figure 11b it can be seen that in 1960 the self-sufficiency rate was 108 per cent but since 1970 the rate has declined. In 1990 the rate has declined further but the sharpest decline has been in the year 2000 and the self-sufficiency rate has dropped down to 53 per cent. Although, a slight of 2 per cent increase can be seen in 2013 but the rate has declined rapidly since 1990 and has not recovered yet.

Vegetables were seasoned ones and formed an important part of the side dishes of the traditional Japanese meal. From the Table 11a and Fig 11b it can be seen that in 1960 Japan was 100 per cent self- sufficient. Since 1970 the rate has declined but the rate of decline has been slow. The sharpest fall in the rate has been in 2013 and the rate has dropped down to 79 per cent.

In nutshell it can be said that in case of rice Japan is self-sufficient. Despite rice diversion programme introduced in the 1970s and other programmes encouraging production of other crops, Japan is still self- sufficient. Production of rice has been much more than other crops mainly because of Japanese farmers' propensity for growing rice and the amount of support and benefits provided by the government for rice farmers since 1960. In soybeans the self-sufficiency was very low since 1960s and since then the self-sufficiency rate has declined rapidly, thus making Japan extremely less-sufficient in soybeans. Japan was self-sufficient in fish till 1980 but from 1990 the rate has declined and Japan has become less self-sufficient. The most important reason is the introduction of the exclusive economic zones on seas, whereby beyond 200 nautical miles no country is allowed to do fishing and this had severely hampered the fishing industry of Japan as such the number of

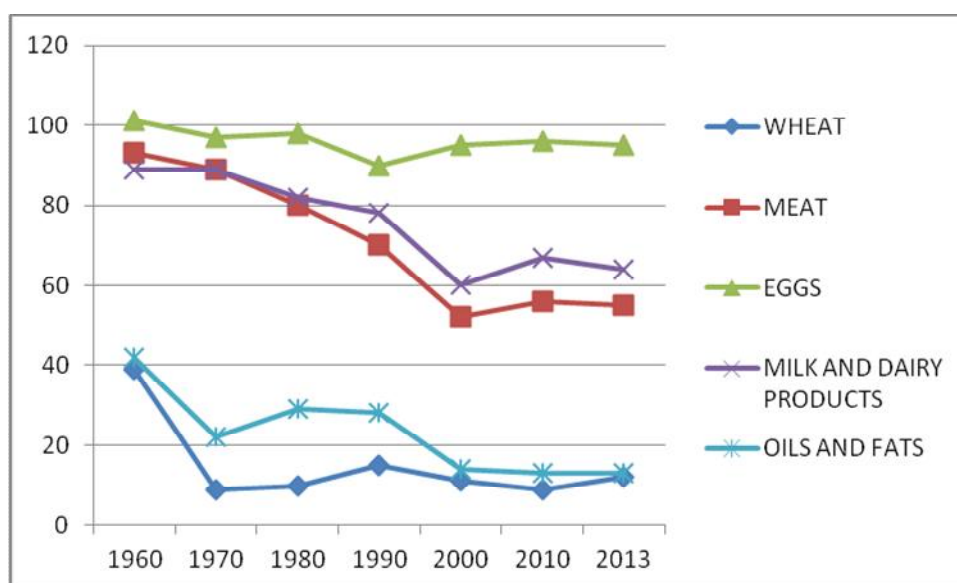
catches in the fishes has declined. In case of vegetables Japan was self-sufficient in 1960s though the rate has declined but it is still much above 50 per self-sufficiency rate, therefore still Japan is self sufficient.

Table 11b: Food Self-Sufficiency of Western Food (per cent)

YEAR	WHEAT	MEAT	EGGS	MILK AND DAIRY PRODUCTS	OILS AND FATS
1960	39	93	101	89	42
1970	9	89	97	89	22
1980	10	80	98	82	29
1990	15	70	90	78	28
2000	11	52	95	60	14
2010	9	56	96	67	13
2013*	12	55	95	64	13

Source: MAFF, *2013 figures are approximate figures.

Table 11b: Food Self-Sufficiency of Western (per cent)



Source: MAFF

From Table 11b and Figure 11b it can be seen that in 1960 the self-sufficiency ratio of wheat was 39 per cent and since 1970 the rate has declined continuously with minute rise in between. Overall, Japan's self sufficiency in wheat is extremely low.

Meat was not the food that was consumed in Japan since ancient times as eating meat was banned in Japan. Its consumption level was very low until the economic growth period of 1960s. From Table 11b and Figure 11b it can be seen that Japan

was self-sufficient in meat in 1960s and the rate was 93 per cent. Till 1980s Japan's self-sufficiency level was sufficient but from 1990 after a 10 per cent decline the rate declined sharply reaching 56 per cent in 2013 and the lowest was in 2000 when the rate had declined to 52 percent. Thus, self-sufficiency in meat has declined. Similarly like meat eggs were also not consumed but its consumption level increased post 1960s economic growth period. In 1960 Japan's self-sufficiency ratio in eggs was 101 per cent and in 2013 it had dropped down reaching to 95 per cent. Thus, Japan is self-sufficient in eggs.

In case of Milk and dairy products whose consumption has increased manifolds since 1960s it can be seen from Table 11b and Figure 11b that the self-sufficiency ratio was 89 percent and Japan was self-sufficient. Since 2000 the rate has declined reaching 64 per cent in 2013. Thus, it can be seen that the rate has declined but it is still above 50 per cent. In case of oil and fats it can be seen from Table 11b and Figure 11b that self-sufficiency was 42 per cent in 1960 and since 1970 the rate has declined with minute rise in between but overall the rate has fallen rapidly reaching 13 per cent in 2013. The in oil and fats Japan is extremely low self-sufficient.

It can be said that in wheat Japan was not self-sufficient from 1960s only and over the years the self-sufficiency rate declined further. In case of meat Japan was self-sufficient and it can be said that as dietary pattern changed and number of people consuming meat increased the domestically produced meat was not sufficient to meet the increase in demand and the self-sufficiency level declined. Japan has been self-sufficient in case of eggs. In milk and dairy products Japan was self-sufficient but from the year 2000 the rate has declined and this has made Japan less sufficient. Japan was not well self-sufficient in oil and fats and over the years as the self-sufficiency rate declined, Japan became further less-self sufficient.

Overall, looking at the consumption of various food items, it can be seen that in case of traditional food the consumption of rice and fish has declined over the years. The consumption of soybeans has slightly increased in comparison to 1960 consumption levels. Moreover, the consumption of vegetables has declined but the level of decline is minute. In case of western food, the consumption of meat, eggs milk and dairy products, wheat and fats and oils has increased.

Further, we have seen that Japan's overall self-sufficiency ratio of food has declined and delving into the self-sufficiency ratio of each food item, it can be said that Japan is self-sufficient only in rice and vegetables, although the self-sufficiency ratio of vegetables is also on gradual decline. Japan was self-sufficient till 1990 in case of fish but after that the rate has declined and in 2013 Japan was just 50 per cent self-sufficient. In case of soybeans it can be seen Japan was very less self-sufficient from 1960 only and over the years its rate has declined completely reaching to the level of 5 per cent in 2013. The self-sufficiency ratio of meat, wheat, milk and dairy products and fats and oils has declined and this shows that Japan is less sufficient in the mentioned western food items. However, in case of eggs only Japan is self-sufficient.

Transition in dietary pattern not only reduced the consumption of the traditional food items but it also compelled Japan to import food as the domestic agriculture could not produce much to meet the demands of the people for western food. Moreover, as demand for western food increased the production of traditionally consumed food also declined as its consumption had declined. Consequently, this led to decline in self-sufficiency ratio of food items. Thus, change in dietary pattern in Japan has further aggravated the problem of food security as for Japan ensuring food security implies increasing self-sufficiency ratios through domestically produced food.

CHAPTER 3

AGRICULTURAL POLICIES AND ITS IMPACT ON FOOD SECURITY

3.1. INTRODUCTION

Agriculture has always played an important role in the economic development of all the countries of the world. It has been the chief means of livelihood for the people since time immemorial and as the societies moved from agrarian to industrial phase agriculture has provided the much needed share of raw materials to the industries which it still continues to provide. But the most important function of agriculture is to produce and provide food to the people for their survival. It has always been the main and only source for continuous food supply and security in terms of food to the people.

Similarly, agriculture sector in Japan played a crucial role of providing food and livelihood to the people since recorded history. Further, it has been an integral part of Japan's modernisation process and rise as a powerful nation of the world from Meiji period till the beginning of World War II. And during Second World War despite difficult situation agriculture sector still played its role of producing and supplying food to the people at home and to the army.

By the end of hostilities shortages of manpower, fuel and equipment had reduced the level of agricultural output well below its pre-war level (Francks, et al., 2002:76) and there was severe food crisis in Japan. In addition, the war repatriates and urban people who had returned to the villages after the chaos state in the cities added extra burden on the agriculture sector. However, the agriculture sector with the support of the occupants not only recovered gradually but in the mean time it was able to provide food and livelihood to the people. In a short span of time the number of workers working in the agriculture sector increased.

The working population in agriculture immediately after World War II increased to 16.6 million from the 13.9 million in 1940, and until 1953 it did not decrease materially (Ohkawa, 1961: 1104). The number of farm households also increased to 6

million from the pre-war level of 5.5 million (Ohkawa, 1961: 1104). Further, the contribution of agriculture to the national economy of Japan increased significantly. Immediately after the war, the agricultural income in the domestic net national product at factor cost rose to 31 per cent, which was as high as that of the 1920's (Ohkawa, 1961: 1107). Lastly, agriculture played a significant role in the process of re-building the country. As such agriculture continued to underwrite the industrialization of Japan after the war until the early 1960s (Balaam, 1984:282)

However, from 1960s onwards the overall role of agriculture in Japan has diminished and its trajectory has been continuously downward. Its most important function of producing sufficient food to meet the demands of the people whose numbers has tripled after the end of second world war as well as whose taste for food has changed from traditional to western type of food has declined. Today, agriculture in Japan is just able to supply 39 per cent of daily supplies of food on calorie basis and rest 61 per cent is met through imports. Its contribution to the national income and in providing employment to the natives has also declined over the period of time.

Agriculture sector in Japan suffers from many problems and the evident problem is the scarcity of arable land. Due to mountainous terrain Japan only has 12.4 per cent land for cultivation out of the total land and this has been the main hindrance in expanding and making the agriculture sector commercially viable. Further, the problem is that the amount of land under cultivation is declining continuously as a result of other uses of land due to rapid urbanisation and also due to the abandonment of land and keeping it fallow.

The above problems are magnified by existence of small sized farms since the post war period. The occupants inspired land reforms of post war period although, gave lands to the tenants but then the farm size became small and this further hindered large scale farming in Japan thereby making farms in Japan economically less productive

The rapid and miraculous economic growth from 1960 onwards, propelled by manufacturing and export industries created huge demand for the labours in the industries as a result farm workers migrated to industries and the most able and productive workers left the farms. Thus, the farms were left in the hands of older, physically less productive and perhaps entrepreneurially more conservative family members (Gorham, 1979:33) as well as women. However, it has become an acute

problem as the farmers in Japan are at the same time rapidly aging and its population is declining at faster rate than the normal population.

As migration of farmers took place it was assumed that consolidation of small size farms into large farms would materialise but it failed because the economic growth increased the demand for land for various uses and in turn the prices of the lands went high. As a result the migrated farmers kept hold of their lands to sell it when the prices go further high and until then these farmers used the land for part-time farming mostly rice mainly because it was less labour intensive as well as the amount of benefits the government was giving to the rice growers. Thus, gradually the number of part-time farmers farming mostly rice in the small sized farms increased whereas the number of full time farmers began to decrease.

Further, the most important problem of the Japanese agriculture is that of increasing the self-sufficiency level and ensuring a continuous supply of food. The scarcity of arable land, existence of small sized farms farmed by rapidly aging and decreasing farmers and increasing part-time farmers mostly engaged in rice farming activity has led to continuous decline in overall agricultural output thereby limiting the agriculture sector to become self-sufficient. Besides, the above mentioned problems the Japanese agriculture sector is confronted by new problems such as rise in food prices, increasing competition from food imports and environmental problems.

Thus, in order to increase the overall output of the agriculture so as to become self-sufficient and to ensure stable supply of food as well as to solve new problems faced by agriculture the Japanese government enacted various agriculture policies. Therefore, this chapter will first look into the agriculture sector in Japan as a whole and then will delve into various agriculture policies and its impact on ensuring food security in Japan.

3.2 CULTIVATED LAND IN JAPAN

Nature has not endowed Japan with abundance of land. The total area for agriculture cultivation in 2013 was 12.4 per cent¹⁴ out of the total land area. The limited available agricultural land is the biggest physical challenge for expansion and development of agriculture in Japan. Moreover, as a result of triple increase in population, rapid

¹⁴ World Development Indicators, 2016

urbanization and industrialization after 1960s and demand for land for various uses has led to decline in cultivated area in Japan. At the beginning of twentieth century, Japan had about 5.25 million hectares (Mha) of cultivated land and by 1921 it had reached a peak of about 6.05 Mha; by 1929 it declined to 5.85 Mha, and by 1937 it was again back to 6.05 Mha (Smil and Kobayashi, 2012: 135). During the intervening decades the cultivated area declined but in 1961 Japan's cultivated area reached its greatest-ever extent of 6.08 Mha (Smil and Kobayashi, 2012: 135). From 1965 onwards the cultivated area declined consistently as seen from Table 12.

Table 12: Cultivated Land (Mha)

Year	Cultivated Land (Mha)
1965	6.02
1970	5.81
1975	5.57
1980	5.46
1985	5.38
1990	5.24
1995	5.04
2000	4.83
2005	4.70
2010	4.59
2013	4.54

Source: Ministry of Land, Infrastructure, Transport and Tourism.

From Table 12 it can be seen that the cultivated area declined to 6.02 Mha in 1965 from 6.08 Mha in 1961. However, in 1970 the cultivated area fell below 6 Mha and reaching to 5.81 Mha. From 1970 till 1995 the cultivated area has declined continuously but stayed under 5 Mha. But in 2000 it fell below 5 Mha and reached 4.83 Mha and by 2013 the cultivated area had declined to 4.54 Mha. Thus, in short it can be seen from the table 12 that since 1965 the drop in the cultivated land has been continuous and by 2013 the agriculture sector in Japan lost more than 1.5 Mha of cultivated land.

3.3 THE AGRARIAN STRUCTURE OF JAPAN

The present agrarian structure of Japan is characterised by cultivator-ownership of small-sized family farms, involved in small scale farming and rice cultivation being the main farming activity. This agriculture structure of cultivator-ownership system draws its origin from the occupants inspired land reforms carried out immediately after the Second World War. Prior to the land reforms of 1946-50, the agrarian structure that prevailed was that of private ownership. Private landownership was thoroughly adopted (Ogura, 1966: 152) and land was leased out by the land owners to the tenants for cultivation. This was mainly because under the new land tenure system a landlord could, at his will, take back the leased land from his tenant (Ogura, 1966: 152).

However, immediately after the war the government carried out the land reforms. The land reforms abolished the system of large landowners and absentee ownership of land and in its place the principle of cultivator- ownership of land was established (Kihl, 1982:333). During the 4 years from 1947 to 1950, the government purchased 1.7 million ha of farmland from landlords and transferred 1.9 million ha, including state-owned land, to tenant farmers (Takahashi and Honma, 2015: 7).

Further, the land reform measures also limited the size of land ownership in Japan and set the upper limit of land ownership to a maximum of three hectares (Kihl, 1982:333), except the northern island Hokkaido region. As per the SCAP Natural Resources Report published in 1951 (No148:24) there was 40.6 per cent (2,522,355 households) of newly created “ owner-cultivator” owing less than .5 hectare of farmland, and with an additional 31.9 per cent (1,972,917 households) owing between .5 and .99 hectare of farmland (cited by Gene, 1999: 31). In addition the Agricultural Land Law passed in 1952 further restricted land sales and strengthened the rights of tenants, and by 1955 only 9 per cent of the cultivated area was tenanted (Francks, et al.,2002:77).

However, the land reform only brought changes in the ownership of the land but did not do much in increasing the size and scale of the farms. As a result the traditional agrarian structure of Japan, characterized by small-scale family farms with an average size of about 1 ha, remained despite the rise and the fall of landlordism ((Takahashi and Honma, 2015: 7). In addition it might be said that Japanese agriculture emerged

from the reform with an average holding even smaller than before, and in scattered plots as before (Ogura, 1966:155). Therefore, at present also average farm size in Japan has remained small as shown in Table 13

Table 13: Farm size in Japan (Thousand households)

Year	Total Cultivated Land	0.5ha under	0.5-1.0 ha	1.0-2.0 ha.	2.0 ha and over
1960	5823	2275	1907	1405	237
1970	5176	1999	1604	1272	301
1980	4542	1922	1304	981	335
1990	2,884	704	1,049	782	348
2000	2,274	545	813	592	324
2010	1,587	343	553	413	278
2013	1,415	784	*	357	275

Source MAFF.

* Data not available.

Hokkaido is excluded.

From the Table 13 it can be seen that in 1960 total of 5823 thousand households who had cultivated land and out of which 2275 thousand households had land under 0.5 hectares, 1907 thousand households had land between 0.5- 0.1 hectares, 1405 had land between 1.0-2.0 hectares and 237 thousand households had land 2.0 hectares and above. In 1970, there has been a decrease in the total number of households who had cultivated land, mainly because there has been a decline in number of households who had cultivated land under 0.5 hectares, between 0.5-0.1 hectares and between 1.0-2.0ha. But, the number of households who had 2.0 ha and above land has increased compared to 1960 reaching to 301 thousand household.

In 1980 similar decreasing trend can be seen in case of households having cultivated land under 0.5 hectares, between 0.5-0.1 hectares and between 1.0-2.0ha whereas the number of household who had 2.0 ha and above land has increased to 335 thousand household. Further, similar trend can be seen from the table and in 2000 the number of households who had 2.0 ha and above cultivated land has also decreased. And by 2013 the total number of household having cultivated land was only 1415 thousands out of

which 784 thousand households had land under 0.5ha, 357 had lands between 1.0-2.0 ha and 275 thousand households had land 2.0 ha and above.

Further, from the table it can be seen households having lands under 0.5 hectares were the highest and household having the lands 2.0 ha and above were the lowest. Moreover, it can be seen that the total households having cultivated land has declined consistently since 1960 but after 1990 the decline has been sharp.

3.4 Labour Force In Agriculture

Since 1960s Japanese economy witnessed high economic growth rate on account of rapid growth of its industries. This resulted in increase in demand for labour in the economy. Consequently, farmers migrated from the farms to cities for better opportunities thereby leading to overall decline in number of farmers working in agriculture. The number of people employed in agriculture decreased from 13.40 million in 1960 to 2.33 million in 2013 (MAFF). Never before in Japanese history have so few food producers catered for so many non-food producers (Gasparatos, 2010: 1101). The decline in agricultural labour force is illustrated through Table 14.

Table 14: Labour force in Agriculture Sector

Year	Population Engaged in Farming (Millions)	Core person mainly Engaged in Farming (Millions)
1960	13.4	11.7
1970	10.3	7.0
1980	7.0	4.1
1990	4.8	2.9
2000	3.9	2.4
2010	2.6	2.1
2013	2.3	1.7

Source: MAFF

From the Table 14 it can be seen that in 1960 “population engaged in farming”¹⁵ was 13.4 million and “core person mainly engaged in farming”¹⁶ was 11.7 million both falling to 10.3 million and 7.0 million in 1970, 7.0 and 4.1 million in 1980 and by 2000 both had fallen below 5 million. And in 2013 the population engaged in farming was 2.3 million, and core person mainly engaged in farming was 1.7 million. Further, it can be seen that the rate of decline is rapid during 1960s and 1990 as this period witnessed rapid urbanization in Japan. And from 1990 onwards the rate of decline is less as compared to previous decades. However, from 1960 to 2013 more than 11 million engaged in farming left the farms to the cities. Moreover, core person mainly engaged in farming has declined faster than the population engaged in farming.

3.5 AGING FARMERS AND FEMALE FARMERS IN AGRICULTURE

During 1960 and 1970 as per Table 14, 3.1 million people left the farms, and within two decades from 1960 to 1980 more than 6 million people who were employed in the farms left the farms. The rapid migration of the most able-bodied members of farm families into the cities each day (Gorham, 1979: 33) took place due to rapid urbanization and better non-farm opportunities. Consequently, the farms’ responsibility was left in the shoulders of women and on old people who at the same time were ageing fast.

¹⁵ Population Engaged in Farming as per MAFF refers to the number of farm household members engaged in "subsistence farming" (persons engaged in farming) who exclusively engaged in subsistence farming and those who held other jobs in addition to subsistence farming but spent more days in the year prior to the survey date engaged in subsistence farming.

¹⁶ Core persons mainly engaged in farming” refers to those persons from “among the population mainly engaged in farming, who mainly undertake agricultural work during regular hours.” This definition of core persons excludes students and persons who are mainly engaged in housework and child rearing (Godo, 2013: 1)

Table 15: Aging Farmers (In thousands of person)

Year	Total Male Workers	15-29 Years old	30-49	50-59	60-64	65 and over
1980	2,674	321	625	587	305	836
1990	2,249	154	344	387	402	962
2000	1,721	149	201	184	200	987
2010	1,306	58	119	162	157	811
2013	1,179	162	*	122	158	737
Year	Total Female Workers	15-29 Years old	30-49	50-59	60-64	65 and over
1,980	4,299	390	1,393	1,160	482	874
1,990	2,841	143	684	708	486	821
2,000	2,171	98	356	339	307	1,071
2010	1,300	32	115	196	162	794
2013	1,211	135	*	159	176	740

Source: MAFF * Data not available.

From Table 15 it can be seen that in 1980 the total number of male workers were 2674 thousands of persons out of which 836 thousands of workers 65 years and above were the most as compared to workers falling under various age categories. Moreover, the most productive workers within the age group of 15-29 years old were just 321. In 1990 the total number of male workers had declined to 2249 and during the same period the number of workers under and 65 and over years old increased further. Similarly, the male workers under the age group of 60-64 also increased. However, the male workers in age categories of 15-29 years, 30-49 years and 50-59 years decreased.

In 2000 except for workers 65 years and above workers belonging to other age categories decreased further. And in 2010 the workers belonging to all the age groups declined but workers belonging to age group of 65 years and above were more than workers of other age groups. Also the number of workers belonging to the age group

of 15-29 fell below 100 thousand of persons reaching just 58 thousands of male workers. However, in 2013 the overall male workers has declined reaching to 1,179 thousand workers. In the same period there has been decline in number of workers belonging to all the age categories except the workers belonging to 15-29 years old, which in fact has doubled as compared to 2010.

In nutshell, it can be said that from 1960 till 2013 there has been a rapid decline in the total number of male workers and there has been decline in the number of workers belonging to all the categories. Further, it can be seen from the table that since 1960 the number of workers belonging to 65 years and above at first increased till 2000 and from then it has declined, yet throughout five decades it has more workers as compared to workers in other age group categories. Thus, it can be said that maximum male workers in the agriculture sector in Japan are old.

Further, from the table in 1980 there were total 4299 thousands of female workers out of which the maximum female workers belonged to age group category of 30-49 and 50-59. And the number of female workers belonging to 65 years and above age was 874 and female workers belonging to the age group of 15 to 29 was 390 lowest among all the age group workers. In 1990 female workers belonging to all categories except 60-64 years of age has decreased. In 2000 female workers belonging to all the categories has decreased except 65 and years above has increased reaching to 1071 thousand of female workers. Moreover, both in 2010 and 2013 the number of female workers in all the age categories has declined but in 2013 the female workers belonging to age group of 15-29 has increased. Overall, despite declining trend the most number of female workers belonged to age group of 65 years and above. Thus, like male workers maximum female workers are old.

Table 16: Female Labourers in Agriculture Sector.

Year	Female Engaged in family-operated and custom farming (Millions)	Male Engaged in family-operated and custom farming (Millions)
1960	9.1	8.5
1970	7.9	7.6

1980	6.1	6.4
1990	5.0	5.4
2000	3.2	3.6
2010	2.1	2.4
2013	1.8	2.1

Source: MAFF

From Table 16 it can be seen that in 1960 the number of females working in the farms were 9.1 million, more than the male counterparts. Although, the number of females engaged in farming had declined to 7.9 million in 1970 but it was still more than the male labourers. During 1960 and 1970 the female labourers were more than the male mainly because male workers migrated to the cities in search for better opportunities. From 1980 the number of females working in the field declined and by 2013 it had dropped and reached 1.8 millions. Further, from the table it can be seen that after 1980 the decline in female labourers was caused by the migration of the female labourers to the cities mainly due to better non-farm opportunities. Thus, it can be said that it was only during 1960 and 1970, the rapid growth period, that the female labourers were more in numbers but as agriculture became less profitable and lucrative, and emergence of better non-farm opportunities in the cities not only led to the migration of male labourers but female labourers also migrated.

3.6 FARM HOUSEHOLDS AND PART-TIME FARMING

As farm labourers migrated to urban areas it was thought that it will lead to the consolidation of small farms into large farms units thereby making large scale farming possible. However, in reality consolidation process failed as most migrated farmers were unwilling to lease or sell their lands. Consolidation process mainly failed, first, because of the Agricultural Land Law of 1952, it protected the tenancy rights so strongly that it was almost impossible for landlords to evict tenants (Takahashi and Honma, 2015: 5). Moreover, this law controlled the land rent to such a low level that the non-farm farmers did not find much incentive to lease out the land and thus kept the land as it is.

Second, the lax enforcement of the restrictions on conversion of farm land for non-farm uses under the Agricultural Land Law and of the zoning of land for agricultural use under the Law Concerning the Establishment of Agricultural Promotion Areas (Agricultural Promotion Law) (Kazuhito, 2008: 2). The less strictness in the law for the conversion of farm land for nonfarm uses also encouraged the non farming landowners to keep their land with themselves. In addition, during high economic growth period the demand for land increased and consequently the price of the land also increased, therefore non-farm farmers held on to their land with the hope that the price of the land will rise further so that they can sell the land at higher prices rather than selling land to other farmers who cannot pay much.

In addition the *gentan* policy introduced by the Japanese government in 1969 played an important role in not allowing the consolidation of micro-farms. The main objective of *gentan* policy was to keep the price of rice high by reducing the rice's supply through reduction in the amount of land cultivated as rice paddies and shift the part of the rice paddies to other crops (Yoshikawa, 2010:4). Moreover, Ministry of Agriculture, Forestry and Fisheries (MAFF) paid billion of yen in the form of compensation to the farmers who have shifted the rice paddies for other crops irrespective of the farm size, therefore this also encouraged the farmers with small farms to retain their land preventing consolidation of small farms.

Failure to consolidate the micro-farms resulted in the emergence of part-time farming earning substantial income from off-farm employment. The trend towards part-time farming is thus a unique characteristic of Japanese agriculture today (Kihl, 1982: 333) .Over the years part time farming has increased and full time farming has declined. Thus, decline in number of farm house holds and part-time farming is illustrated in Table 17

Table 17: Commercial Farm households and Part-time farming (in thousands of households)

Year	Commercial farm households	Full-time	Part-time
1985	3,315	498	2,817
1990	2,971	473	2,497
1995	2,651	428	2,224
2000	2,337	426	1,911
2005	1,963	443	1,520
2010	1,631	451	1,180
2013	1,455	415	1,040

Source: MAFF

From the Table 17 it can be seen that in 1985 commercial farm households were 3315 out of which 473 were full time farming households and part time farming households were 2819 households. Part-time farming households were five times more than full time farming households. In 1990 overall farmhouse hold has declined similarly full time and part-time farming households has decline still the majority is the part-time farming households. In 2005, the farm households total has dropped but full time farm house holds has increased to 443 whereas part-time farming has declined rapidly. In 2010 also full time farming households has increased but there is a sharp fall in part-time farming leading to overall decline of farm households. In 2013, the full-time farming has declined again and part-time farming has declined further leading to overall decline in farm households. Further, it can be seen that overall farm house holds has declined but part-time farming households though declining are still more than full time farming households.

3.7 AGRICULTURE PRODUCTION IN JAPAN.

Immediately after the war, there was severe food crisis in Japan and agriculture sector could not do much because it itself lacked the required man power and equipments. The government in cooperation with the occupiers gave the first priority to the agriculture sector and increasing the production became the most important task. In

this connection the occupiers conducted land reforms and implemented it during 1946-50. Moreover, the war repatriates and the urban people who had returned to rural areas from the cities led to rise in the number of people working in the agriculture sector. Gradually the agriculture returned to normalcy and production began to increase. Moreover, with renewed provision of labour and fertiliser, the output of major crops had returned to pre-war levels by 1950 (Francks, et al., 2002:77).

By mid 1950s the Japanese economy began to rise on the account of industrialisation and then it entered the period of economic miracle of impressive economic growth by 1960s. Due to rapid industrialisation the demand for labours began to increase in the cities and the farmers began to migrate as there were more opportunities for growth and development. In 1960 the population engaged in farming was 13.4 million and in 1970 it had declined to 10.3 million (MAFF, Historical Statistics of Japan). Despite farmers migrating to the cities the agriculture production was average and the self-sufficiency ratio on calorie basis was 79 per cent in 1960. But as the migration increased the self-sufficiency ratio fell to 60 per cent by 1970. However, throughout the miracle period, agricultural output growth continued, averaging an annual rate of 3 per cent during 1955–70 (cited in Francks, et al., 2002: 78).

1970 Japan was confronted with unexpected events like Soviet crop fall, US President Nixon's embargo on soybeans and the oil crisis and all this hampered the industrial growth of Japan. Yet the migration of farmers to the cities continued and the emergence of part-time farmers farming rice on small sized farms from 1960s due to industrial development continued to rise whereas fulltime farmers' numbers continued to decline. As such productivity of agricultural sector in Japan began to decline Moreover; the late 1980s bubble burst further hampered the Japanese economy growth as well as the agricultural output. Agricultural output growth slowed to less than 1 per cent per annum during the 1970s and 1980s and Japan emerged as the world's largest food importer (Francks, et al., 2002: 81). In 1990, the self-sufficiency ratio on calorie basis had declined below 50 per cent there by reaching 48 per cent. The bubble burst compelled the Japanese economy to grow at the slower rate and the East Asian crisis of early 1990s further affected the growth of the Japanese economy and this in turn hampered the agricultural output. In 1995 the self-sufficiency ratio

declined further reaching 43 per cent. Thus, on the one hand Japanese economy grew at extremely slow rate and on the other hand the agriculture declined further.

One can conclude that the problems like limited arable land, small sized farms, declining farming population who at the same time ageing rapidly, decreasing full-time farming households and increasing part-time farmers along with the unexpected events from 1970s hindered the overall growth of the agriculture sector in Japan. Thus, the decline in agricultural production of various food items is given in table 18.

Table 18: Agriculture Production 1960-2013 (Thousands tonnes).

Year	Rice	Wheat	Vegetables	Fruits	Meat	Cow milk and milk products	Fishes and shellfishes	Soybeans
1960	12,858	1,531	11,742	3,307	576	1,939	5,803	418
1970	12,689	474	15,131	5,467	1,695	4,789	8,794	126
1980	9,751	583	16,470	6,196	3,006	6,498	10,425	174
1990	10,499	952	15,740	4,895	3,478	8,203	10,278	220
2000	9,490	688	13,670	3,847	2,982	8,414	5,736	235
2010	8,554	571	11,730	2,960	3,215	7,631	4,782	223
*2013	8,718	812	11,946	3,010	3,283	7,448	4,286	200

Source: MAFF. * Approximate Value.

From the Table 18, in case of rice it can be seen that in 1960 the production of rice was 12,858 thousand tonnes, although in 1970 the production declined but it was within 12000 tonnes. From 1980 it decline and dropped below 10000 tonnes but then recovered by 1990. Again from 2000 it began to drop and in 2013 it had reached 8,718 tonnes, thus, rice production dropped by approximately 4000 thousand tonnes from 1960 to 2013. In case of wheat, the production was 1531 thousand tonnes in 1960 and in 1970 there was a sharp decline in the production, although, from 1980 it began to increase but again in 2000 the production decline reaching 688 thousand tonnes. In 2010, the production dropped but in 2013 the production increased again. Overall, wheat production has dropped sharply when compared with 1960 production level.

Vegetable production since 1960 has increased till 1990 but from 2000 it began to decline reaching 11946 thousand tonnes in 2013. In sum the vegetable production has declined from 2000 onwards but the production level was still higher than the 1960 production level. Fruits production in 1960 was 3,307 thousand tonnes and from 1970 it increased till 1980 reaching 6,196 tonnes. But from 2000 it began to decline reaching 3,010 in 2013. Meat production in 1960 was just 576 thousand tonnes and from 1970 it began to increase reaching highest in 1990 reaching 3,478 thousand tonnes. In 2000 slight decline is there but from 2010 the production again increased reaching 3,283 thousand tonnes in 2013.

Further, in case of cow milk and cow milk products the production trend is that of increasing from 1970. The production reached highest level of 8,414 thousand tonnes in 2000. Although, from 2010 a slight decline is there and it has continued till 2013 but the production level of cow milk and products has increased more than 6 times since 1960. In case of fish and shellfish the production has increased since 1970 onward reaching the highest production of 10,425 tonnes in 1980. Although, in 1990 a slight decline can be seen but from 2000 sharp decline in the production can be seen from the table such that the level of production in 2013 was less than the 1960 production level. Soybeans production in 1960 was 418 thousand tonnes but from 1970 it began to decline, although from 1990 it began to increase with minor declines. Overall the production of soy beans has declined.

Further from the table it can be seen that the production of rice, the dominating food item, has decreased since 1960s mainly because of the rice diversion programme. The production of meat, vegetables, cow milk and milk products has increased over the years, whereas production of wheat, soybeans and fishes has declined at a rapid pace. Fruits production has remained almost at par with the 1960s level.

3.8 AGRICULTURAL POLICIES IN JAPAN

Limited availability of arable land, small sized farms with rice production as the dominant production has been the main features of Japanese agriculture throughout history. These features have been the main hindrance for Japan in increasing the domestic production of food and sustaining the agriculture sector. However, to

overcome the hindrance and to increase the production of food, and become self-sufficient, various agriculture policies were enacted over the years.

Before the industrialisation process in Japan not much emphasis was given to agriculture policies as agricultural output was sufficient to meet the demands of the population. The dawn of industrialisation led to rise in demand for food as there was rapid increase in population and their standards, but at the same time Japan having limited arable land could not meet the rising demand, therefore, through colonisation process Japan was able to secure and meet the rise in demand. In the mean time the agriculture policy objective was to be self-sufficient in rice and meet the demand of the people for food.

During the war the then government enacted an agricultural law (Food Control Law of 1942) which was mainly a control mechanism that would control the price and distribution of food items particularly rice, it continued throughout the war period. After the end of hostilities there was severe food shortages in Japan and this situation was made worse as, the war of 1941-45 brought the colonisation period to a close (Sheppard and Beun, 1980:3) and the supply line for food from the colonies to Japan ended. To overcome this situation the then Japanese government with the cooperation from the occupiers gave the first priority of making the agriculture sector recover at the earliest possible, therefore, resources were directed towards the agriculture sector. However, the food control system (Food Control Law) of pre-war origin was carried forward in the post-war period so as to control the distribution and price of the foods particularly rice. And the main objective of the agricultural policy to be achieved through food control system was to achieve self-sufficiency in food items and most importantly in rice at non-inflation price levels.

From 1960 onwards Japan entered a period of high economic growth with the support of rapid industrialisation. During this period income of the people particularly working in the industries increased at a very fast rate than the people working in the agriculture sector. Consequently, a gap in the income level of the people working in the industries and in the agriculture not only surfaced but began to widen at faster rate. Industrialization also compelled, though it's a natural process, the migration of labourers from the fields to the cities because of better

opportunities. As a result, the population of farmers began to decrease in the fields and the agriculture output began to decrease.

Further, with rapid economic growth the income of the people also increased thereby increasing their affluence and purchasing power and this in turn led to change in the diet of the Japanese people from traditional to western diet pattern. Thus, Japanese people crave for western food increased whereas demand for traditional food stuffs, primarily rice got reduced. Therefore, to solve these problems, the Japanese government enacted Agricultural Basic Law in 1961 with the following objectives, first, to remove inequalities between the agriculture and the industrial sector, second, to prevent the gap in income level so as to equalise the income of the agricultural workers with that of the industrial workers. Third, objective was to increase the self-sufficiency of selective food items because their demands had increased. And last was to modernise the agriculture sector so as to improve the production efficiency. These objectives were to be achieved through structural reformation of the agricultural sector and by providing price supports at sufficient levels.

Although, as anticipated the consolidation process of historically existing micro-farm agriculture structure into large economically viable farms did not take place mainly because of industrialisation which had led to rise in demand for land and as such prices of the land also began to increase. Thus, people kept their farm lands with the hope that the price of the land will rise further. Consequently, this led to emergence of part-time farmers earning substantial off-farm income and continuously engaged in rice farming so as to receive benefits from the government. And, this resulted in surplus production of rice, however, the consumption of rice had declined, and therefore to deal with the problem, the Japanese government introduced acreage control schemes with the objective of diverting the rice production into other alternative crops production.

By the early 1970s, the objective of raising the income of farmers had been largely achieved but this had occurred through the addition of off-farm income as well as farm product price increases (Sheppard and Beun, 1980:6). Further, up to the early 1970, the decline in self sufficiency was viewed with concern by Japanese policy makers but was not considered an area for urgent dramatic action (Sheppard and

Beun, 1980: 6). But then the three events during early 1970s compelled Japanese policy makers to rethink the decline in self-sufficiency of foodstuff. First, was the Soviet crop shortfall and consequent heavy purchases on the world market in 1972 and 1973; and grain became hard to find (Gorham, 1979: 35). This sparked off fears of an impending world food shortage and food commodity prices began to rise rapidly (Sheppard and Beun, 1980: 6).

Second, was the President Nixon's embargo on exports of soybeans in 1972 made Japan realize that their supply line for food is vulnerable and is at the mercy of the exporting country. The third event was the Arab oil embargo in 1973, while it did not involve food, the oil embargo and quadrupling of oil prices contributed to a general feeling of vulnerability on the part of the Japanese (Gorham, 1979: 35). These events are generally credited in bringing an end to the economic miracle of Japan that made Japan one of the economically most powerful countries in the world.

The end of miraculous period led to slower growth of the Japanese economy. During post-economic period the Bubble burst in the late 1980s had further slowed the growth of the economy and the appreciation of Yen as per the Plaza Accord of 1985 had further increased the already existing trade friction between Japan and its major trading partners. In addition, the rice crisis of 1993 led to severe rice shortage in Japan and the agreement of the Uruguay Round of GATT negotiations in 1994 which compelled Japan to reduce trade barriers to agricultural trade and to open up the Japanese agricultural market mainly rice markets for the outside world. Therefore, to comply with the agreements of Uruguay Round of GATT and to resolve the crisis the Japanese government enacted New Food Law in 1994.

Further, to deal with continuous problem of low self-sufficiency, low agricultural production, the pressure for further opening the Japanese agricultural market, to fulfill the multi-functional role of agriculture and most importantly to secure stable supply of food the Japanese government enacted New Basic Law on Food, Agriculture and Rural Areas in 1991. Thus, this section will delve into various Japanese agricultural policies.

3.8.1 Food Control Law 1942

The Food Control Law was essentially a war time making but it was continued throughout the post war period. The main objective of this law was to establish a food rationing mechanism that would control supply and distribution of food items, especially rice, wheat and barley, during war period when food was in short supply. It gave the government legal authority over almost all food items (Ohnuki-Tierney 1993: 16). Under its provisions, farmers were required to hand over all the rice they grew, less their own rationed consumption, to the state's authorised collectors and distributors (Francks, Boestel and Kim, 1999: 84) so that there is equitable distribution of food to the people during war period.

In the immediate post war period Japan experienced severe food shortages and the immediate concern was to increase agricultural production. In addition, another concern was to ensure adequate supplies of food at non-inflationary price levels to the people (Francks, Boestel and Kim, 1999:86). After the war, the land reforms, mechanisation and fertilizers helped in the recovery of the agricultural production within short period of time. The output of major crops had returned to pre-war levels by 1950 (Francks, Boestel and Kim, 1999:77). Thus, the Food Control Law was adjusted as per the need of the time and then continued during the immediate post war period. It allowed the government to control the price and distribution of the food items, mainly rice. Further, this law made it mandatory that the rice should be purchased only from the licensed retailers at prices fixed by the government devised mechanism. Only agents designated by the Food Agency within the Ministry of Agriculture, Forestry, and Fisheries may participate in the marketing of rice, and prices are regulated from the farm gate to the wholesale level (Honma, 1993: 97).

The main objective of the Japanese agricultural policy during post war period was to achieve self-sufficiency in food items. To achieve self-sufficiency, the government adopted policy measures which heavily subsidized farmers through price supports that included government determination of the purchase and retail prices of rice (Kihl,1982:332). Thus, through Food Control Law, by 1960, Japan was close to fully self sufficient in foodstuffs (Sheppard and Beun, 1980: 4). Further, due to intense effort, the production of rice began to increase and by 1960

the self-sufficiency ratio of rice had reached almost 102 per cent. Thus, the objective got fulfilled by 1960. Thus, the main objective of this law was to create food self-sufficiency by controlling the production, distribution and supply of the food.

3.8.2 Agricultural Basic Law of 1961

As the economic miracle took off and the growth of urban industrial employment and incomes accelerated, farm households began to experience the sense of relative decline which is symptomatic of agricultural adjustment (Francks, Boestel and Kim, 1999:86). But the phenomenal pace of industrial growth meant that the gap between sectoral growth rates in output, productivity and incomes was bound to widen (Cited in Francks, Boestel and Kim, 1999: 78). From 1959 to the early 1970s, agriculture grew at around 4 percent per year, while the Japanese economy grew at an average annual rate of 10.8 percent (Cited in Tsakok, 2011: 33). Consequently, the farmers' incomes tended to lag behind those of urban workers. In an attempt to prevent the rural-urban income gap from widening, the Agricultural Basic Law was enacted in 1961.

This law established two goals, one, correction of disparities between agriculture and industry, and , two, fostering the income of farm households to the same level as in other sectors. In order to realize these goals, two types of policy programs were introduced. One was reform of the structure of agriculture. This was to be accomplished by encouraging farmers who had decided to pursue other professions in more urban areas to sell their farmland, thus making large-scale farming possible (Yoda, 2006:28). However, reform of the agriculture structure did not happen mainly because of rise in demand for farm land for non-farm use, as a result farmers who had migrated to the cities held their land with them with the anticipation that the price of the land will rise further. Consequently, this led to the emergence of part-time farmers earning substantial income from non-farm jobs.

The other measure was price supports. In order for farmers to realize a level of income equal to that of other workers, the price of rice had to be supported at a level sufficient to guarantee the cost of production (Yoda, 2006:28) and for this, the government set the price of rice high. Thus, even part-time "weekend" farmers, who operated on a small scale and with high costs, found it more profitable to grow

rice themselves than to pay high prices to buy it, and thus did not want to rent out their farmland (Yamashita, 2006:3).

Consequently, only the production of rice increased as it was the most profitable food item, thereby leading to surplus. Further, the failure to consolidate the micro-farms into large farms led to the overall decline in the agricultural productivity. However, by the early 1970s, the objective of raising the income of farmers had been largely achieved but this had occurred through the addition of off-farm income as well as farm product price increases (Sheppard and Beun, 1980:6). Thus, agriculture policy became primarily an income support rather than a production-promoting policy (Tsakok, 2011: 34).

3.8.3 New Food Law 1994

In 1993 Japan experienced worse rice harvest and this in fact turned out to be the worst in post-war history (Francks, Boestel and Kim, 1999: 98). By early 1994, the country suddenly faced supply shortages, emergency imports and the queuing and panic-buying which came to be nick named the Heisei Rice Riots (Francks, 2007: 1). The Food Agency eventually had no choice but to import quite large quantities of rice from wherever it could at short notice, but consumers proved extremely reluctant to buy the foreign rice and retailers were in the end ordered to blend it with Japanese rice. (Francks, 2007: 12).

Further, this 1993/1994 crisis with the critical phases of Japan's Uruguay Round negotiations over the liberalisation of the rice market (Francks, Boestel and Kim, 1999: 98) and in December 1993, agreement was finally reached within the Uruguay Round of GATT for moves to reduce Japan's agricultural trade barriers, including, most significantly, the opening of the rice market to imports (Francks, 2007: 1). Then, in the wake of these events in December 1994, the Diet passed, with unprecedented lack of debate and controversy, what has become known as the New Food Law superseding the 1942 Food Control Law (Francks, 2007: 1)..

This law removes the basis of the old Food Control System in that, under it, the government no longer has the obligation to buy, or indeed manage, the whole rice supply and the farmer no longer has the obligation to sell only along government controlled routes. Government buying and storage of rice (including the minimum

access imports) will take place only up to a specified level of stocks, the purpose of which is to supplement supplies at times of shortage, and private-sector organizations (the co-operatives) are also to hold stocks for emergency use, thus partly privatizing the cost of maintaining emergency supplies (Francks, 2007: 13)

Moreover, sales of rice by farmers directly to whole salers or consumers are to be treated as legal, although farmers are still supposed to report their intended sales to their local agricultural authorities (Francks, 2007: 13). Thus, this law led to the abolishment of the food control system that existed since 1942 and thereby created free market for rice.

3.8.4 New Basic Law on Food, Agriculture and Rural Areas 1999

Japan enacted The New Basic Law on Food, Agriculture and Rural Areas in 1999 and replaced the Agriculture Basic Law of 1961. This new law was the paradigm shift in the agriculture policies of Japan and it widened the scope of agricultural policy objectives to include food security by ensuring stable supply of food, multi-functionality of agriculture, sustainable development of agriculture and promotion of rural development.

The main thrust of the basic law of 1961 was to reduce the disparity of productivity and income between agricultural and non-agricultural sectors, mainly through agricultural structural policies (OECD, 2009: 32). Further, this law also stipulated that the government should establish a Basic Plan for Food, Agriculture and Rural Areas, including 1) basic direction in formulating policies on food, agriculture and rural areas, 2) A target rate of food self-sufficiency and 3) government polices implemented comprehensively and systematically with regard to food, agriculture and rural areas. The basic law requires that this plan be revised approximately every five years (OECD, 2009: 32).

Apart from achieving food self-sufficiency rate this new law, however, on the consumption side, the Basic Plan mandates practical “food education (*Shokuiku*)” that promotes consumption of domestically produced food, supports the local food movement, and ensures consumer’s faith in domestic agricultural products (OECD, 2009: 43). In addition to enhancing domestic agricultural production, the Basic Plan stipulates that the government should secure stable food imports and prepare

an emergency manual that identifies actions to be taken in the event of a food supply crisis (OECD, 2009: 45).

The first Basic Plan for Food, Agriculture and Rural as stipulated by the Basic Law of 1999 was announced in 2000. The main objective of this plan was to meet the target of 45 per cent of food self-sufficiency on calories basis by the year 2010. One of the most important aspects of the basic plan of 2000 was the introduction of a direct payment policy replacing some price support (OECD, 2009: 32). Further, as a policy to improve the structure of agricultural production, the first basic plan of 2000 stipulated the need to promote the incorporation of farm enterprises, which led to the deregulation of farmland law to allow private limited companies to purchase farmland under certain conditions (OECD, 2009: 32).

The Second Basic plan was announced in 2005 and this plan set up the target of 45 per cent of food self-sufficiency on calories basis by 2015. It further added a target of 75 per cent of food self-sufficiency on production value basis. The new basic plan of 2005 announced the introduction of direct payments for core farmers as a part of farm management stabilization measures (OECD, 2009:32). Further, to hasten the process of structural adjustment, the second basic plan of 2005 stresses the importance of identifying the principal farmers who would be the foundation of a stable and efficient farm system and targeting policy support to these farmers. This includes community-based farming co-operatives which were identified as potential core farmers and these farming organisations are promoted by the plan. Moreover, the new basic plan stresses the importance of concentrating farmland to efficient and stable farm management and promotes new entrants to agriculture, including by further deregulation of farmland ownership law (OECD, 2009:32).

3.9 PROTECTION OF AGRICULTURE IN JAPAN

Japanese agriculture is protected by such policy instruments as border protection, direct supports on farm product prices, and subsidies on agricultural production inputs (Honma,1993:98). Protection of agriculture began during the wartime period, mainly through the enactment of Food Control law in 1942, which led to establishment of Food Control System. It rested on three pillars of bureaucratic regulation :(1) control over the mechanisms where by the price of rice, at all levels of the distribution system, was determined;(2) management of the system for

distributing rice from producer to consumer via regulation of rice traders;
(3) government control over external trade in rice (Francks, 2007: 3).

The food control system basically was to control the supply and distribution of the main food items by the state during the war time period as there was short supply of food. However, during the post war period this system controlled the price and distribution of main staples, mainly, wheat and barley. However, by 1950s wheat and barley were released from this system. Imports of wheat was allowed and Japanese wheat growers came to be protected by tariffs and support prices in a manner more typical of agricultural protection elsewhere in the industrial world. Similarly, producers of other agricultural products came to receive protection and price support through a whole array of market interventions ((Francks, 2007: 5).

Under this system the rice was the most important food item, its price and distribution was thoroughly controlled by the government from the farm gates till it reaches the consumer. The rice farmers were supposed to give away all their rice to the government agent at a price fixed by the government to the local co-operatives. Further, the local cooperative will give it to the prefecture level cooperative and then the prefecture to the national co-operative. The national co-operative will sell the rice to the licensed wholesalers at the selling price fixed by the government. The licensed wholesaler will then give it to the licensed retailer to sell it to the consumers. The consumers were allowed to purchase rice only from the licensed retailer at the price fixed by the government. This system mainly allowed the state to intervene and control supply, distribution and price of rice. This system continued till the passing of New Food Law in 1994.

Until the period of economic miracle the food control system task was to control the supply, distribution and price of the food items mainly rice. However, during the period of miraculous economic growth the food control system not only provided income support to the farmers but it also provided protection to the rice market from the outside competition. Due to rapid industrialisation, the per capita income of the people working in the industries increased at rapid pace in comparison to farmers. This created a gap in between the workers of two different sectors.

Therefore, to increase the income of the farmers and make it at par with the industrial workers, the government started buying rice at a higher rate and it increased further with time. In 1960 the government bought rice from the farmers at yen 4164 per 60 kg, in 1970 it was yen 8272 per 60 kg and in 1980 it bought the rice at yen 17674 per 60 kg (Francks, Boestel and Kim, 1999:87). Thus, throughout post war period the government has provided protection to the agriculture sector particularly rice. Rice is the only food item that is heavily protected in Japan. Moreover, the protection rate is increased over the years and Japan's protection level is highest in the world.

Despite enacting various agriculture policies with numerous objectives Japan's agriculture sector as a whole has declined. Its contribution to GDP has reduced from 9 per cent in 1960 (OECD, 2009) to 1.2 per cent in 2013 (MAFF, 2014). Number of farm house holds has declined and at the same time the number of full time farming households has declined. The numbers of farm households were 3315 thousands in 1985 and it has declined to 1455. Moreover the labour force has decline, such that in 1960 there were 13.43 million workers working in the agriculture sector in Japan and in 2013 it dropped to 2.13 million only. Most of the farmers are old farmers who are aging at faster rate, in 2013 there was only 162 thousands of workers belonging to the age group of 15 to 29 and in the same year there was 737 thousands of workers in the age group of 65 years and above. In addition, Japan's food self-sufficiency ratio on calorie basis was 79 per cent in 1960 and in 2013 it was 39 per cent.

The main objectives of Japan's agriculture policies has been to achieve self-sufficiency in food, increase the income of the farmers and bring structural change in the agriculture, though in recent times the multi-functionality of the agriculture has also become one of the objectives of the agriculture policy in Japan. Further, over the period of time the agriculture policies of Japan though, enacted with the objective of improving self-sufficiency level and overall improvement of the agriculture sector instead it provided the highest level of protection to the farmers and this in turn has not helped Japan to fulfil any of the objectives laid down in the policies. Moreover, the protection and support provided to the farmers and the agriculture sector has made Japan one of the largest importers of food items in the world.

CHAPTER 4

AGRICULTURE AND POLITICS IN JAPAN

4.1 INTRODUCTION

Japanese agriculture used to have three basic statistical constants: 5.50 million hectares of farm land, 14 million people employed in agriculture and 5.50 million farming households. These figures remained largely unchanged for 85 years between 1875, in the early Meiji era, and 1960 (Kazuhito, 2008:1). However, from 1960 onwards the Japanese agriculture began to fall gradually such that in 2013 the cultivated land had declined to 4.54 million hectares. The number of population engaged in farming has declined such that in 1960 it was 13.4 million and by 2013 it had fallen down to 2.3 million.

Further, full-time farming household has declined as compared to part-time farming households, although, part-time farmers are also in decline yet they are more in numbers than the full-time farmers. In 1960 full-time farming households were 2078 thousand households and part-time farming households were 3090 thousands households and in 2013 there were only 413 fulltime farming households whereas there were 1040 part-time farming households. The factors needed in order to enlarge the agriculture sector have declined and this in turn has led to overall downfall of the agriculture sector in Japan.

Agriculture's contribution to GDP in 1960 was 9 per cent but by 2013 it had dropped down to 1.2 per cent. The self-sufficiency ratio in 2013 had dropped down to 39 per cent from 79 per cent in 1960. Nonetheless, the Japanese government made efforts to prevent the downfall and help the agriculture sector grow by providing perpetual support and protection. But, despite support and protection the agriculture has declined completely.

Support and protection was provided by the government to the farmers in order to remove the disparities between the agriculture and industrial sector, to increase the income of the farmers and make it at par with the industrial workers, increase the self-sufficiency ratio so as to ensure continuous supply of food and improve the overall

growth of the agriculture as well as protect the sector from imports and liberalisation of the sector. However, the support and protection system itself became the hindrance on the growth of the agriculture as it did not allow the restructuring of the agriculture sector, such as consolidation of existing micro farms into large and economically viable farms, but instead it encouraged farmers engaged in non-farm jobs to grow rice on the land for extra income and benefits, which they were not selling because of the hope that the price of the land will rise further as there was increase in demand for lands due to rapid industrialisation.

Despite being an obstacle, the support and protection provided to the agriculture sector in Japan continues to exist is mainly because farmers are the largest voting bloc in Japanese electoral system and plays an important role in the formation of the government. The power of Japanese farmers at the ballot box has been the single most commonly cited factor in the political explanation for Japan's agricultural support and protection(Mulgan, 2005:160). Therefore, because of their voting power and importance farmers have established a relationship with the policy makers and the government continuously. And it maintains this relationship by putting pressure to the government and policy makers through the agriculture cooperatives (*Nokyo*), so that the government maintains the status quo of support and protective system and frames policies that are pro-farmers.

Thus, a relationship exist among the agriculture cooperatives representing farmers' interest, bureaucracy and the government because each has its own mutual interest and each relies on each other, and this relationship is referred as "iron triangle". Mulgan (2005) opines that the farm sector has been far more politically important than the contribution of agriculture to the national economy warrants, as farmers have sheltered under a broad umbrella of political largesse and administrative regulation throughout most of the post-war period.

Since 1955, Liberal Democratic Party (LDP) has heavily relied on farmers' votes and support to stay in power continuously. But the electoral reforms of 1994 in which multi-seat system was changed into single-seat system, the victory of Democratic Party of Japan (DPJ) in Upper House in 2007 and the lower house election in 2009 in which the DPJ won the landslide victory brought changes in the politics of Japan thereby bringing changes in the politics within the agriculture sector.

Therefore, this chapter will give an insight of the politics in the agriculture sector and in doing so it will examine in detail the role and interest of each member of the iron triangle. This chapter will also delve into the impact, the electoral reforms of 1994, the DPJ victory in 2007 in the upper house election and the 2009 lower house election victory, had on the politics within the agriculture sector. Further, it will delve into the impact of politics in the agriculture sector in limiting food security in Japan.

4.2 FARMERS IN AGRICULTURE SECTOR

In Japan most farmers have small farms, an average of about 1 hectare, in which the main crop they grow is rice. Farmers' population has declined continuously since the economic boom period as farms became less lucrative in terms of occupation. In 1960 the number of farmers was 13.4 million; by 1990 it had dropped down to 4.8 million and in 2013 it declined further to 2.3 million. In this declining trend the most number of farmers are part-time farmers earning substantial income from the non-farm jobs. Full-time farmers exist but their numbers are less than the part-time farmers. In 1960 full-time farming households were 2078 thousand households and part-time farming households were 3090 thousands households and in 2013 there were only 413 fulltime farming households whereas there were 1040 part-time farming households.¹⁷

Further, along with the declining trend most of the farmers are those belonging to the age group of 60 and above/or are aging rapidly. Thus, the overall decline of farm population in which part-time farmers are the dominant ones, although their numbers has also declined, and in addition the aging farmers along with small sized farms are important factors that has led to the downfall of the agriculture sector in Japan.

The downfall of the agriculture has continued despite continuous support and protection through policies. The main objectives of agriculture policy of Japan since post Second World War has been to increase the income of the farmers through subsidization and price support, remove the disparities between farmers and industrial workers, and increase the self-sufficiency of food produced. However, over the period of time the income of the farmers increased, in fact farmers' income surpassed the

¹⁷ Data source: Kada, R (1982), "Trends and Characteristics of Part-time farming in Post-war Japan", *GeoJournal*, 6(4): 368 and MAFF.

income of the industrial workers. Self-sufficiency got increased but that of only rice and in no time the production of rice became surplus. Although, it was rapid industrialisation that led to rise in demand for lands and farmers held on to their lands with the hope that the price of the land will rise further but the support and protection provided to the agriculture sector particularly to rice encouraged those farmers to hold on to their land and instead engage in rice farming for income and benefits till the price of the land increases.

As a consequence, part-time farmers proliferated and this did not allow the restructuring of traditional small-farm structures into large-scale farms in Japan. Further, this system protected the domestic farm sector from foreign exporters through high import tariffs and price support. Thus, the support and protective system instead of helping the agriculture sector to grow has led to its downfall and at the same time farmers mainly part-time farmers has proliferated and benefitted from it.

This support and protective system has been continuously kept in place mainly because farmers have political power as they are the largest voting bloc in Japanese electoral system and play an important role in the formation of the government. Therefore, political candidates of various political parties during election ask for the support of the farmers so as to be elected in the government and to stay in power continuously, and the candidate in turn preserves the support and protective system intact.

Further, to exercise their political power farmers form voting blocs because they have been members of traditional farming communities for generations. Mulgan (2005) opines that in Japan farmers wield great political power mainly because of the following reasons; firstly, the organisational basis of farmers' political power is formidable. Farmers have been well mobilised across a spectrum of groups at the same time as unifying in a single, universal system of agricultural cooperatives, which has played a comprehensive role in shaping farm politics, the rural economy and society. Secondly, farmers have been a potent political constituency because they form a coherent voting bloc in an electoral system that has over weighted the value of their votes throughout most of the post war period. Thirdly, farmers have secured the loyalties of large numbers of Diet politicians

because the predominant ruling party has been electorally indebted to farm voters and farm organisations.

Similarly, Godo (2012) says that as a voting group, the traditional farming community has several characteristics that are attractive to politicians. First, traditional small-scale farmers have cultivated the same land for generations and have strong community ties because of their collaboration with other farmers. Second, farmers' voting rates are usually higher than are those of non-farmers and the number of registered voters per member of the Diet (parliament) is smaller in rural than it is in urban areas. Although this rural-urban disparity has been addressed to some extent in the electoral system reforms of 1994, rural voters still have approximately three times the voting power than their urban counterparts (Godo, 2009:3). Third, urban dwellers in Japan often show sympathy towards farmers, and the Japanese mass media tend to describe farmers as honest and weak people who need special protection from the government. It has therefore been in the interests of politicians to maintain the structure of traditional small-farming communities in order to retain the electoral support of farmers.

Thus, farmers being one of the largest voting groups, it has been politically influential and at the same time their nature of being the largest voting group attracts governments and political parties as they play crucial role not only in supporting the government in power to be continuously in power but also in the formation of new governments. Despite the overall decline in the farm population, farmers are still an important voting group to be reckoned during the time of election.

4.3 FARMERS' REPRESENTATION IN POLITICS IN JAPAN

Since post-World War II farmers have been exercising their political power to continuously keep the support and protective system intact as they form the largest electoral groups. Farmers have been exerting their political influence to the government and to the political parties seeking the support of farm votes to be in power, through the national network of agriculture cooperatives called *Nokyo*, later renamed as Japan Agriculture Cooperative (JA), since its establishment as per the Agricultural Cooperative Union Law, or *Nokyo* Law enacted in 1947. *Nokyo* was created by the government with the purpose of providing economic services to the

farmers and rural communities but over the period of time its functions has diversified and it has been providing, apart from economic services, numerous social, political and financial services to both farmers and non-farmers. Its focus was limited to marketing and sales of agricultural products whatsoever, but over time it has emerged as a giant in services and trade (Grabal, 2005: 2). Moreover, JA (*Nokyo*) were organized to prevent family-run farmers created through agricultural land reform after World War II from becoming the tenant farmers once again (Koyama and Kobayashi, 2007: 33).

Nokyo plays an important role of organising the farmers and their votes to form voting blocs and on this basis it lobbies to the Japanese government to maintain the status quo of existing support and protection apparatus provided to the agriculture sector. JA has consistently lobbied for increased protection for Japanese agricultural commodities, and the organization has frequently dissuaded the Japanese government from entering into international trade agreements (Godo, 2009: 1). Further, JA not only lobbies politicians and provides services to farmers but also observes and controls members' activities, both directly and indirectly. It also functions as a de facto sub-governmental body that helps the MAFF create and enforce policy (Godo and Takahashi, 2012: 4). The coops serve as the linchpin, both electoral and bureaucratic, joining the conservative coalition to its rural mass base (Bullok, 1997:1).

Therefore, this section will begin by giving an overview of representation of farmers in the national politics before the establishment of *Nokyo*. Further, this section will examine the role of *Nokyo* as a sole representative organisation of the farmers and as a strong political lobbying group.

4.3.1 Representation of Farmers before the Establishment of *Nokyo*

Many organisations existed prior to the establishment of *Nokyo* as the sole organisation that represented the farmers' interest. Most were reincarnations of pre-war groups, although wartime agricultural organisations initially carried over into the post-war years (Mulgan, 2005: 23). Organisations like the Farmers' Union (*Nomin Kumiai*), Rural Youth Leagues and Nogiyokai were the important organisations that represented farmers' interest.

Farmers' Union (*Nomin Kumiai*)

It was founded in the year 1946, although its origin can be traced to the pre-war farmers' union. Its members were mostly tenants and in no time its popularity increased among the farmers moreover its political influence also increased in a newly democratised country. It had indirect political support from political parties such as Japan Socialist Party (JSP) and Japan Communist Party (JCP). Its main objective was to demand for agriculture land reforms so as to help farmers from the atrocities of the landlords and to remove heavy taxes imposed on the farmers. Its popularity and political influence had increased manifold among the farmers since its formation.

However, the popularity of the farmers' union declined with the completion of land reform by 1948 mainly because its main objective of land reforms was achieved and gradually began to lose its popularity. Adding to it, as democratisation process in Japan began to take pace the heavy taxes on farmlands were reduced and the passing of Agriculture Land Law in 1952 which provided subsidies to farmers further played a significant role in the downfall of the farmers' union. Another potent factor weakening the farmers' unions was the refocusing of their leaders on other causes. Many of those active in these groups in the immediate post war period were later elected to positions of responsibility in other agricultural organisations, such as the agricultural cooperatives and agricultural committees, as well as in local, prefectural and national politics, and lost interest in protest movements (Mulgan, 2005: 26). Further, the internal conflict among the leaders of the union, although it was non-party based union but having indirectly supported by JSP and JCP led to ideological and leadership conflict thereby leading to the decline of the farmers' union. Lastly, the agriculture cooperatives established and funded by the government to represent the farmers' interest was also an important factor for the decline of the farmers' union. Thus, starting with land reforms the farmers' union lost its importance and ceased to exist.

The Rural Youth Leagues (*noseiren*)

It was established in 1946 and founded by the local agricultural leaders, many of whom had previous histories in the government-sponsored *nokai*¹⁸ and *sangyo kumiai*¹⁹, and who rejected any connection with left-wing farmers' unions (Mulgan, 2005: 26). Its core members were mostly large scale full-time owner farmers, although membership was also opened to non-farmers. Its objectives were demand for land reform, to abolish landlord system and the modernisation of agriculture. In addition to these objectives the most important objective of the rural youth group was establishment of the producer cooperative organisation that would be democratic, free from political influence and bureaucratic intervention. Thus, its basic objective was to ensure that the newly established agricultural cooperatives would be free from the coercive organisational aspects of the *nogyokai*²⁰ (such as compulsory membership) and the bureaucratic authoritarianism of the pre-war period at the hands of the Ministry of Agriculture and Forestry (MAF) (Mulgan, 2005: 27).

However, the land reform was completed by 1948 and this not only fulfilled the demand of land reform but with land reform the landlord system that existed in the farms of Japan also got abolished and this weakened the rural youth league. But the most important factor that led to the downfall of the youth league was the establishment of agricultural cooperative system by the government which was one of their principal aims.

Nogyokai

The *Nogyokai* was established by the government as per the Agriculture Groups Law in 1943 by unifying two cooperative associations namely *sangyo kumiai* and *nokai*. The unified cooperative system was under the direct control of the state (Bullock, 1997:1); and *nogyokai* executives were effectively appointed by government (Mulgan,

¹⁸ *nokai* : Agricultural association operating in the pre-war Japan.

¹⁹ *sangyo kumiai*: The industrial or producer cooperatives operating in the pre-war Japan.

²⁰ *nogyokai*: It was a nationwide network of agricultural organisations established in 1943 to serve the wartime economy.

2005: 24). Its members were both landowners and tenants and its membership was made compulsory for all the farmers. It was mainly a wartime organisation set up with the objective of serving the wartime economy. It was designed to share the responsibility of controlling and mobilizing village economy for war purposes (Hayami, 1988: 46). Thus, its main function was to control, collect and distribute agriculture products particularly rice. Further, it was the source of the supply of state funds and technical assistance to agriculture (Francks, 2006: 275). It continued to perform the same function till the time it was abolished under the Occupation authorities. Further, *nogyokai's* all economic activities were transferred to the agricultural cooperatives set up based on the Agricultural Cooperative Law of 1947 (Esham, et al. 2012:944).

In Japan, initial attempts to establish an association that would represent farmers' interest proved to be a failure. Moreover, various associations and cooperatives that existed got abolished or vanished once their objectives were fulfilled and they ceased to function as they did not have other objectives to unite the farmers. Thus, the attempt to organise a farmers and achieve independent representation of the agricultural sector in national politics failed during the immediate post- war period.

4.3.2 *Nokyo*, later Renamed Japan's Agricultural Cooperatives (JA)

Nokyo is a nationwide cooperative organisation of farmers established as per the Agriculture Cooperative Law of 1947. *Nokyo*, in April 1992 re-titled itself into JA Group. 'JA' is short for 'Japan Agricultural Cooperatives'. *Nokyo* changed its name in order to establish a new corporate identity. The aim was to revamp the image or impression of *Nokyo* to the wider public (Mulgan, 2005:16). Almost all farm households, no matter what they produce or the level of their engagement in agriculture, belong to their local agricultural cooperative (Ibid:16) but most of its members are part-time farmers having small farms. In 2012 it had 717 co-operatives and 9.97 million members throughout Japan (Sasada, 2015:15).

Nokyo (JA), as a farmers' organisation was nothing new to Japan. Historically delving JA can be traced back to the traditional cooperative movement during the Tokugawa period (1603 -1868) (Esham, et al. 2012:944) .The traditional cooperatives became extinct with the abolishing of feudal rule by the Meiji restoration in 1868 (Ibid,

2012:944). However, the enactment of Cooperative Society Law in 1900 by the Meiji government provided the framework for the establishment of cooperative organisation system in Japan. To begin with, the first such organisations were *Sangyo Kumiai* (industrial cooperatives) and *Nokai* (agriculture associations). Furthermore, with the passing of Agriculture Groups Law in 1943 the two organisation were merged and a new farmers' cooperative organisation was created named *Nogyokai*. This new organisation was although, created during the pre-war period was allowed to continue during the post-war period until it was abolished and *Nokyo* was created. Thus, *Nokyo* already had antecedents since the Tokugawa period and the system of cooperatives got flourished during the Meiji period and it was carried and continued since then throughout the pre-war period, war period and post war period.

Until 1997, JA had a basic three tier hierarchical structure on local, prefectural and national level. Local cooperatives would look at local level such as village, town and city level. All the local cooperatives within a prefecture would combine and form prefectural cooperatives. And all the prefectural level cooperatives would unite and form the National agriculture cooperatives. Since then the three-tier system is being steadily converted into a two-tier system by eliminating the prefectural tier to improve efficiency in management, delivery of services and savings on administration expenses (Prakash, 2000:5). JA's primary objective is to provide various economic services to farmers, non-farmers and rural communities. However, it has become an organisation that provides social and political services as well. In short, besides collecting and distributing function JA has over the years come to provide various other services as giving credit, providing insurance and welfare services. In addition it is also a political lobby group for the farmers in the government

4.4 ROLE OF MINISTRY OF AGRICULTURE, FORESTRY AND FISHERIES (MAFF) IN AGRICULTURE SECTOR

Ministry of Agriculture, Forestry and Fisheries, (MAFF) as established in 1949 as per the law. The MAFF's main function is to intervene in agriculture and agriculture related sector. As Mulgan (2005) opines that the MAFF's most basic rights of intervention are embedded in its founding legislation, the purpose of which is to establish an organisation to implement the administrative duties and projects within MAFF jurisdiction as well as to set out clearly the scope and competence of MAFF

administration. Thus, it has become the chief instrument of state intervention in the agriculture sector. The MAFF administers agriculture through all the legal, institutional, financial and administrative means at its disposal, drafts agricultural legislation and the agricultural budget, and negotiates agricultural policies with the ruling parties.

MAFF, apart from being the chief instrument for state intervention in agriculture sector, it is also the main agency that frames various agricultural and farmland policies in Japan. It maintains a cordial relation with both JA and the politicians. For

For the MAFF in order to maintain large personnel and to get the budget required, they need to support the politicians and to do that the MAFF while framing the agricultural policies first consults JA who represents the interest of the farmers. Thus, it acts as a bridge between the farmers and the politicians.

4.5 ROLE OF LIBERAL DEMOCRATIC PARTY IN AGRICULTURE SECTOR

The LDP, in power continuously between 1955 and 1993, and back in government since June 1994, has been overwhelmingly dominant as the party representing agricultural interests in Japan (Mulgan, 2005: 18). Since the early years of Second World War there were many attempts to establish a party that would serve farmers' interests and the cooperativist cause but none of the party could be established. However, with the help of agricultural cooperatives, LDP was able to gain the confidence of the farmers and such that LDP became the only party that represented farmers' interest and as a result LDP stayed in power since 1955 till 1993. Further, farmers also supported the LDP candidates during elections. The reasons for farmers support to LDP are, first and most was that farmers were naturally conservative and therefore did not easily vote for progressives. Second, socio-cultural traditions in farm villages, particularly their communitarian customs and habits of cooperation which encourage farmers to act in unison. As Mulgan(2005) opines that farmers were susceptible to the voting directives coming from the leadership of agricultural interest groups (such as *Nokyo*) to which they belonged, and which, in the majority of cases, encouraged them to vote for LDP candidates. Thus, it made LDP to control the entire rural area and get votes.

Third, farm voters living in rural communities were much more receptive to the personal appeals of LDP candidates than to the more programmatic appeals of opposition candidates. While the latter tended to emphasise party and policy, the former, in the manner of village election campaigns, were more inclined to personalise the election process. This helped LDP to make election more personal and as a result gained support from the farmers. Lastly, the LDP as the dominant ruling party has been the only party in a position to deliver desired benefits to farmers and other rural dwellers in the form of local development projects in provincial municipalities. Moreover, farmers voted for the LDP because rural areas received economic benefits immediately prior to elections (Mulgan, 2005: 183).

Many of these benefits consisted of subsidies for agricultural public works, particularly for land improvement as well as subsidies for rural public works centring on the provision of public infrastructure and facilities to improve the quality of the farmers daily lives. Moreover, social and economic infrastructure benefits in the countryside benefited the large and growing part-time farmer class as rural dwellers rather than as agricultural producers. Therefore, people supported the LDP as the provider of local infrastructure benefits, like many of those not resident in farm households at all. In nutshell, LDP not only became the party that represented the farmers' interest but also provided farmers with various economic benefits and subsidies.

4.6 THE IRON TRIANGLE IN JAPANESE AGRICULTURE POLITICS

In Japan the agriculture sector is highly protected and supported by the government. Such protection has been maintained in Japan since Second World War mainly because of the close and strong relationship among farmers, who are organised by *Nokyo* (JA), Ministry of Agriculture, Forestry and Fisheries (MAFF) and LDP. This relationship that exists is referred to as "iron triangle".

The iron triangle functions in the following ways; first, the JA mobilizes small farmers so that a voting group is formed in order to vote for LDP candidates endorsed by them. In addition, the JA lobbies the MAFF and the LDP for policies that favours the farmers. Second, for the support of the farmers the LDP politicians, particularly the so-called agricultural politicians pressurize the government to enact such policies

that would provide support and protection to the farmers. Last, the MAFF is heavily dependent on the LDP for passing its bills in the Diet. Further, the MAFF drafts the bills that are in favour of the farmers and the JA.

According to many scholars, the iron triangle comprises a set of mutually beneficial exchanges among the three actors (Sasada, 2015: 20). For farmers mostly the small farmers that form the voting bloc the relationship with the MAFF and the LDP is essential mainly because it provides support, protection and benefits like high prices for the agriculture commodities, concession on rents and others. For *Nokyo*, the relationship has helped them to become a sole marketing and distributing organisation for all the agriculture commodities and farm inputs. Besides this they collect rents from those business that are related to agriculture and they also receive subsidizes from other various task. MAFF has huge personnel working for them and to maintain them it needs huge budget, therefore the relationship has helped them to get the required budget. For the LDPs the relationship has helped them to get votes and stay in power as a single part for the last five decades. Therefore, all the parties gain mutual benefit as a result they have formed a strong relationship.

4.7 ELECTORAL REFORMS AND ITS IMPACT ON AGRICULTURE SECTOR

Japan since 1925 had multi-member, medium-sized district system with a single, non-transferable vote (SNTV). The SNTV system was used to elect the members of the House of Representatives from 1947 to 1993 (Maeda, 2007:3). The Lower House electoral reform of 1994 replaced the old single non-transferable vote (SNTV) system with a combination of single-member districts and proportional representation (SMD/PR). In the old SNTV system the candidates mainly campaigned and seek votes on the basis of their personal appeal and achievement such as telling the voters as how many benefits he has brought to his constituency, like construction, development projects and other. Similarly, in the voters have also been voting on the basis of the personal appeal and achievement of the candidate.

However, the introduction of the new electoral reforms transformed the whole electoral structure and made election policy centered and party centered. In the new system the candidates campaigned on the policies endorsed by the parties and the voters voted on the basis of the policies of the parties.

In 1996 the first election was held as per the new system and LDP won the election. In 2000 election LDP won but formed a coalition government. In 2003 election LDP again won the election and its performance was better than 2000's performance. In 2005 LDP won the general elections with landslide victory. However, the turning point came in the year 2007 when LDP lost Upper House elections. In this election the LDP lost many seats in rural constituencies that were previously regarded as the LDP's 'impregnable fortresses'. This record-breaking defeat made the LDP a minority party in at the upper house of parliament (Godo, 2009:16).

Furthermore, the dramatic turning point came in the lower house election of 2009. In this election, the DPJ recorded a landslide victory over the LDP in part because of the drastic changes in the voting behaviour of small-scale farmers. Throughout the election campaign, the DPJ promised to increase farm subsidies, which attracted the votes of small-scale farmers, who had previously formed a solid support base for the LDP. Thus, after the reforms the one party dominance in the Japanese politics was abolished as the voters would vote on the basis of policies of the parties contesting the election rather than personality of the politician.

4.7.1 Agricultural Policies of LDP and DPJ

Immediately after the war the agricultural policy that was enacted, controlled the supply and distribution of food items particularly rice. From then onwards the agriculture policies that were enacted during the reign of LDP were mostly designed to control the supply, distribution and price of the food items, primarily rice. Its policies provided support and protection to the farmers who formed the voting bloc. Moreover, the policies enacted insulated the agriculture sector from the foreign player. In 2007 DPJ won the upper house election and in 2009 it formed the government after winning the elections and the agriculture policies that provided protection did not change but just the ways to provide protection changed and both parties provided different ways.

During the election campaign both the parties had differences in the following given three areas: first, how to provide assistance to farmers; second, the future of rice production adjustment; and third, although not mentioned explicitly in their

manifestoes, how to handle relations with the agricultural cooperatives (Shinichi, 2009:1). And both parties had differences.

In case of providing assistance to farmers, DPJ proposed for providing an “individual household income support system”. In individual household income support system the government paid the difference between production costs and the market price to the farm households for producing agriculture commodities on condition that they meet the production targets set for each individual farm. In addition DPJ throughout the 2009 election campaign promised to increase subsidies and this had attracted the small farmers who had previously supported the LDP. However, LDP in the election campaign of 2009 promised to offer greater support and protection to the farmers.

As for rice production adjustment: LDP did not say anything much on the existing rice production policy. Meanwhile, DPJ said that as per the individual household income support system, farmers will be permitted to produce rice more than their set target but then they would receive only the market price for the rice they produced.

Further, in case of relations with the agricultural cooperatives, despite the weakening relationship between LDP and the agriculture cooperatives, both still support each other and LDP still seeks the support of the agriculture cooperatives. However, DPJ maintains a distance with the agriculture cooperatives. Therefore, both the parties had different approach and solution to the mentioned issues however, it was the DPJ who won the 2009 elections and formed the government in Japan.

LDP Agriculture policies

The problem of Japan’s agriculture lies in the inflexible farmland market, which forces most farmers to be part-timers who land up supporting the JA and the LDP, and in return provide policies that keeps the price of rice high as well provides other supports. Full-time farmers must be able to obtain or rent more farmland in order to make the farmland viable, meaning that a majority of current part-time farmers need to be encouraged to sell or lease their lands. Moreover, it is only through consolidation of small lands that farmers will be able to increase the agricultural productivity and then make farming economically viable.

However, LDP's agriculture policies never addressed the problem of consolidating the land holdings mainly because the part-time farmers' population in the Japanese agriculture sector is largest and they form the solid voting bloc for the LDP. Therefore, instead of consolidating the micro-farms the LDP protected the part-time farmers and provided with better incentives such that the part-time farmers became reluctant to sell their lands. Further, LDP has mostly promoted policies that favour rice producers instead of ending those policies.

The only significant exception about LDP is the policy change that it brought due to the international pressure to comply with the Uruguay Round (UR) of negotiations (1994) and of the WTO's Doha Round negotiations (2001) so as to liberalize agriculture trade and open the domestic market particularly rice. In 1995 Japan as per URAA agreement agreed to import 4 per cent of rice of the total rice consumption and every year the import would be increased by 0.8 per cent for the next 6 years. However, this policy of LDP proved to be unpopular as it affected rice growing farmers.

DPJ Agriculture policies

The DPJ in its 2007 election campaign promised direct subsidy system to the farmers and this played an important role in weakening the LDP and its partners. Throughout the election campaign of 2009, the DPJ promised to increase farm subsidies. And this helped in attracting the votes of small-scale farmers, who had previously been a solid voting base for the LDP.

In 2009 DPJ won the general election and after taking power, based on its pre-election promises, the DPJ launched its program of direct subsidy system. This program main objective was to encourage Japanese farmers to cultivate those agricultural products whose production costs were higher than their prices in the market, including rice and wheat. DPJ had guaranteed to pay the difference between the cost of production and market prices, thus, this system also encouraged farmers to plant crops other than rice.

However, since 2009 till the change of government in 2012 the DPJ policy did not increase the productivity of agriculture sector but it instead led to the decline in the productivity of domestic agriculture. Moreover, its policies did not lead to the

expansion of the farmlands under cultivation and on consolidating the micro-farms. Under the program the small-scale farmers got direct subsidy as before and such that they did not sell their farm lands. Overall, the DPJ policies did not bring significant reforms in the agriculture sector. Its policies only led to fall in the price of the rice.

Drawing conclusion from the above discussion we can say that the political nexus among the farmers/agriculture cooperatives (JA), MAFF and the LDP has acted as a main hindrance in the growth of the agriculture sector in Japan. The JA has supported LDP for the last sixty years or so, and LDP party has relied heavily on the JA in rural districts for votes mainly because more seats in the Diet are allocated to rural areas than to urban areas. For JA, the relationship has provided highly regulated marketing and distribution systems for agricultural commodities and farm inputs that have enabled it to extract monopoly rents from agriculture-related businesses. Moreover, for the MAFF in order to maintain large personnel and to get the budget required, they need to support from the politicians. Therefore, the protection to the agriculture has been provided by the LDP led government over the years.

The mutual benefits that each get has only led to the protection of part-time farmers, further it has not allowed the consolidation of the small farms to economically large farms. The part-time farmers has always been growing rice apart from other crops mainly because government gives huge benefits to the rice cultivators and cultivating rice requires less labour. Therefore, the productivity of rice has increased where as the productivity of other items has decreased. Moreover, the change in government in 2009 did not produce much result in increasing the overall productivity of agriculture sector in Japan instead it also protected the part-time farmers by giving direct subsidies. Thus, agriculture politics has been the main hindrance in increasing the self-sufficiency rate of Japan and overall growth of the agriculture sector in Japan.

CHAPTER 5

AGRICULTURE AND TRADE: IMPORTATION OF FOOD

5.1 INTRODUCTION

Before Second World War Japan imported minute amount of food and was limited to few items like rice, wheat, sugar, meat and few varieties of vegetables mostly from Korea, China and Formosa (presently called Taiwan). However, it was only after war particularly from the rapid economic growth period of 1960s that importation of food began in large quantities. Japan started importing food because the productivity of the agriculture sector was not only low and declining, except for rice, but was also not able to produce food of western style for which the Japanese had developed a taste.

Support and protection through agriculture policies was provided not only to the farmers but also to the domestic market from the exporters because if not protected then the income of the farmers would decline and the comparative advantage of the sector would further drop down as well as the productivity would decline. And this would lead to decline in significance of the sector and had to rely on other nation for continuous food supply. However, the bad experience Japan faced following the food crisis, Nixon soybeans embargo crisis and Arab oil crisis of 1970s made Japan feel vulnerable and therefore it protected the market and over the period of time the protection increased manifolds.

Despite insulating the domestic market Japan imported huge amount of food and in short period of time Japan became one of the largest importers of food in the world. In short, as Japanese economy grew, on the one hand the agriculture sector declined and on the other hand imports began to increase and this led to decline in self-sufficiency ratio of food thereby threatening the food security of Japan.

However, Japan faced with heavy criticism and pressure from the exporting countries for not opening the domestic agriculture market particularly rice market. Thus, to make ways for the liberalisation of the domestic market Japan signed the agreement of Uruguay Round Agreement on Agriculture (URAA) 1993/1994. From 1995 Japan began to implement the terms and condition of the URAA agreement thereby reducing trade distorting domestic subsidies and tariff rates. Yet, Japan was still criticized for opening the domestic market in a limited way and yet importation of

food increased tremendously. Therefore, this chapter will begin by giving an overview of importation of food before Second World War and after war. It will also delve into Japan's engagement during URAA negotiations and WTO negotiations. Further, this chapter will analyse so as to see whether importation of food will ensure food security in Japan despite the fact that for Japan food security mainly meant improving the self-sufficiency ratio by improving and increasing the domestic agriculture production.

5.2 IMPORTATION OF FOOD IN JAPAN BEFORE THE WORLD WAR II

Importation of food was limited to rice, wheat and sugar until the beginning of the twentieth century. Sugar was a rarity in Japan, imported from China and used only in medicine (Ishige, 2011: 187). But after the sixteenth century, the boom in merchant trading led to increase in imports of sugar (Ibid: 187). Popularity of Chinese style of noodles led to the importation of wheat from China in limited quantity. Moreover, during the nineteenth century meat began to be imported by the westerners, living in treat ports, from China for their consumption. However, after the announcement in 1872 that the emperor Meiji has started eating meat in his daily diets, people particularly the elite class started eating meat and most of the meat was imported from China. During the Sino-Japanese War (1894-5), the first modern war that Japan was to fight. The army spent a total of 2,517,380 yen on canned food during that war, of which approximately two million went on canned beef. Imports from the United States accounted for merely one fourth of this amount; the rest was produced domestically (Cwiertka, 2006: 64).

In 1900, Japan was virtually self-sufficient in producing a basically adequate but suboptimal diet (Smil and Kobayashi, 2012: 141) and thus more issue of dependence on importation. Though, limited amount of 0.11 metric tonnes of rice were imported by Japan (Ibid: 15). However, by 1925 Japan was becoming a significant importer of rice, wheat and sugar. Imported rice accounted nearly 16 per cent of the total supply and wheat accounted for nearly 40 per cent of the total supply and about 380,000 tonnes of sugar were brought from Taiwan and other imports exceeding 10, 000 tonnes were rapeseed, soybeans and sesame seeds (Smil and Kobayashi, 2012: 141).

In 1935, Japan's rice imports from its two colonies were almost 17 per cent of the overall supply (Cited in Smil and Kobayashi, 2012: 142). The country also imported

85 per cent of its sugar supply from Taiwan and 60 per cent of all soybeans, mostly from the occupied Manchuria (Ibid: 142). By 1936–38, Korean rice constituted 63 per cent of Japan's total rice imports (Park, 2013:30). Further, as war intensified Japan's importation of rice from its two colonies came to halt because of the blockade done by the allied forces; as a result the food shortage face by Japan during the war time became severe. In nutshell, the importation of food items were very minute and were confined to few food items only.

5.3 IMPORTATION OF FOOD IN JAPAN AFTER THE WORLD WAR II TILL URAA

Immediately, after the war Japan experienced severe short supply of food. The agriculture production was nominal primarily due to war. To overcome the crisis the occupants imported wheat and milk from America. However, there was still no significant imports of meat or processed meat. From 1954 Japan's economy started recovering and this led to increase in income of the people, as a result higher food purchases and importation of food got diversified. During, this period imports of rice, wheat, soybeans and sugar increased.

Further, new import pattern was emerging as the country was buying, for the first time in its history, substantial quantities of foreign feedstuffs in order to boost its output of animal food stuff (Smil and Kobayashi, 2012: 143). In 1955 imports of U.S corn surpassed 300,000 tonnes, they were supplemented by more than 100,000 tonnes of sorghum, and soybeans were imported for feeding (Ibid: 143). The largest amount of feed crops came to be imported from USA.

From 1960 onwards Japan entered a period of miraculous economic growth and during this period the consumption pattern of people changed, from traditional to western pattern. People started consuming more of meat, wheat products, and dairy products. To meet the people's demand for the western food Japan began importing these items and with time the importation increased continuously. Wheat became Japan's second largest grain import and by the end of the century Japan became the largest importer of wheat in the world. Japan also imported huge amount of meat. Although, due to high protection to the meat and dairy market, these food items were still imported in large quantities. However, with liberalization of food trade

Japan's meat imports multiplied from about 0.7 MT in 1985 to almost 2.8 Mt by the year 2000 feeding (Smil and Kobayashi, 2012: 145).

Japan also imports huge amount of soy beans basically for industrial use, in fact since the mid 1970s imported soybeans have provided around 95 per cent of Japan's total consumption (Ibid: 26). Vegetables were not imported much until the beginning of 1970. It was only after that the importation of vegetable increased. The growth of animal production in the 1960s and 1970s was accompanied by a large surge in imports of corn and soybeans for animal feed (Dyck and Arita, 2014: 12). In rice Japan was self- sufficient and miniscule amount of rice for industrial use or during crisis was imported by Japan after 1960 and it remained the same till 1995. Further, Table 18 below provides a detailed insight on imports of food by Japan before The Uruguay Round Agriculture Agreement (URAA) .

Table: 19: Imports of Food from Second World War before URAA

	RICE	Wheat	MEAT
YEAR	Imports (1,000t)	Imports (1,000t)	Imports (1,000t)
1960	219	2,660	41
1964	502	3,471	127
1974	63	5,485	407
1984	165	5,553	830
1,994	1,835	6,044	2,189
	SOYBEANS	FISH	VEGETABLES
YEAR	Imports (1,000t)	Imports (1,000t)	Imports (1,000t)
1960	1,081	100	16
1964	1,607	572	19
1974	3,244	779	360
1984	4,515	1,955	970
1,994	4,731	5,635	2,331
	DAIRY PRODUCTS	EGGS	FATS and Oils
YEAR	Imports	Imports	Imports

	(1,000t)	(1,000t)	(1,000t)
1960	237	0	220
1964	486	0	280
1974	1,038	41	398
1984	1,627	29	405
1,994	2,841	104	660

Source: MAFF

From Table 19 it can be seen that in 1960 rice imports was 219 thousand tonnes and within 4 years duration the imports had increased to 502 thousand tonnes, and within a decade the imports had fallen to 63 thousand tonnes. However from 1984 the imports in rice has seen an increase and in 1994 the imports had reached 1835 thousand tonnes mainly because of the poor harvest of rice in 1993/1994 and to meet the demand Japan imported huge quantity of rice. Form the table it can be seen that the import of all the items has increased from 1960 onwards. The rise in imports of wheat, meat, vegetables, fats and oils.and dairy products is mainly because of the rise in per capita income and change in dietary pattern of the people into western style food. Further, imports in soybeans have increased mainly because of the fall in the domestic production of soybeans, whereas in case of fish till 1974 imports have been less but in 1984 the imports have increased mainly because of the 1982 United nations Convention on the Law of Sea, which allowed fishing up to 12 nautical miles only and this restricted Japan's domestic fishing production, therefore to meet its demands Japan imported fish in increasing amount. Till 1964 Japan did not import any eggs and from the table it can be seen that 41 thousand tonnes of eggs were imported. However, there was a decline in 1984 and again in 1994 there was a sharp increase in importation of egg. Thus, it can be said that from 1960s Japan gradually imported food but with the time importation of all the agriculture increased manifolds.

5.4 JAPAN AND THE URUGUAY ROUND OF AGRICULTURAL NEGOTIATIONS

Japan's self-sufficiency in agriculture began to decline as the economy grew rapidly and it started importing food for meeting the consumption demand for both traditional and western food. Although, it imported food within limited import quotas yet within a short period of time Japan became one of the largest food importers in the world.

The domestic market was heavily insulated from the foreign food items so as to protect the domestic farmers as well as to help them in increasing their income and to increase the self-sufficiency of food.

However, the growing trade surplus of Japan during 1970s due to export of manufactured goods resulted in trade friction between Japan and its trading partners including USA and this led to pressure from trading countries to open its domestic agriculture market. In order to ease the pressure Japan made limited adjustments. Gradual structural adjustments, such as the liberalization of import restrictions on beef and oranges, were made (cited in Meyerson, 2003:70), before, trade of these items was regulated by the government through trade barriers. Though, there was an increase in import quotas for beef, oranges, citrus products and other products yet further pressure was mounted on Japan by USA to liberalize the market and remove protection and this created tension between the two.

Further tension between Japan and US got escalated mainly because US pressurised Japan to open its rice market but Japan refrained from opening its domestic rice market. Rice market and trade was completely regulated by the Japanese government and rice imports were not allowed. Japan imported no rice other than a relatively small quota that was opened in 1972, principally for the use of Okinawa's sake brewers, when the Okinawa island group passed from U.S. to Japanese control (Dyck, *et.al*, 1999:13). Moreover, rice was imported in small quantities at times of poor harvest so as to meet the demand. During the summer of 1984, 150,000 tons of rice were imported from South Korea in order to compensate for a temporary rice shortage (Meyerson, 2003: 71). Thus, Japan's policy of insulating and not opening the domestic market exacerbate the tension.

However, until the Uruguay Round of General Agreement on Tariffs and Trade (GATT)²¹ of 1986 the tensions related to agriculture trade was tried to be resolved either at bilateral level between Japan and its trading partners or through the GATT dispute settlement panel. Agriculture was viewed as part of trade in goods within the

²¹ General Agreement on Tariffs and Trade (GATT) came into force on 1st January 1948. It was a multilateral free trade agreement with the objective of eliminating quotas and tariff so as to abolish trade protectionism.

GATT rate than a separate sphere. Undoubtedly, at numerous sessions agriculture was tried to be brought as a separate sphere within the ambit of GATT but was unsuccessful. It was in the 1986 Uruguay Round of GATT negotiations that agriculture was included with its purview.

The Uruguay Round (UR) of GATT negotiations, focused particularly on barriers to agricultural trade, and in general were able to tariffify non-tariff barriers i.e., to substitute tariffs on imports for fixed quantitative limits to trade (Dyck, *et.al*, 1999:13). The Uruguay Round Agriculture Agreement (URAA) that went into effect in 1995 provides a framework for increasing market access and reducing domestic support subsidies and export subsidies (Davis and Oh, 2007:27). It required each WTO member to replace all broad barriers (tariffs, quotas, and combinations of the two) against the imports of agricultural commodities with an equivalent tariff (Yoda, 2006:10). Under a series of negotiations, Japan agreed to reduce some of the trade barriers protecting agriculture (Davis and Oh, 2007:27) and partially open its rice market. Rice in the negotiations was given a special treatment and Japan was exempted from tariffication for the time being. But in case of other agriculture products tariffication was accepted by Japan. Thus, from 1995 Japan implemented the URAA agreement and allowed the importation of rice.

URAA provided the framework for the liberalization and smooth trade in agriculture goods and it was to be achieved by lowering the protection by the negotiating countries in three areas of market access, domestic support and export subsidies. However, only first two areas concerned Japan as for the last Japan was not a concerned because Japan does not provide subsidies for agriculture exports.

Market Access

Market access in simple words meant reduction of border measures/barriers (tariffs and non-tariffs) in order to facilitate trade of goods in smooth and unhindered manner. Therefore, URAA replaced in 1995 all non-tariffs barriers by tariffs at rates equivalent to the differences between domestic and international (import) prices and then reduce the tariffs rates by 36 per cent on the average with a minimum of 15 per cent reduction for individual commodities within the six year period from 1995 to 2000 (Hayami and Godo, 1997:376) in case of developed countries. In case of developing

countries tariffs rates to be reduced by 24 per cent and to the minimum of 10 per cent over ten years.

To comply with the URAA Japan allowed tariffication of all its agriculture products except for rice. Japan converted non-tariff barriers to tariff equivalents (TEs) for 28 commodities, including wheat, barley, milk products, starches, legumes, peanuts, konnyaku roots, cocoons, silk and pork (Honma, 2000: 1.3). Tariff rate quota (TRQ)²² were created for 19 items (Choi and Sumner, 2009: 93). Rice was exempted from tariffication and was given special treatment under Annex 5 of URAA. However, as per the special treatment Japan agreed for the minimum access commitment and as per it Japan agreed to allow imports of rice of 4 per cent of domestic consumption and the import would be increased at the rate of 0.8 per cent every year till over the next six years so that the import reached 8 per cent in 2000. During these six years, imports of rice would be duty-free, and the importation of a number of other farm products would be affected by tariffication and tariff reductions (cited in Meyerson, 2003: 88).

Under the commitment of URAA Japan was to import 379,000 tons of rice in 1995 and 758,000 tons in 2000. However, in 1999 Japan stopped the special treatment given to rice and instead went for tariffication. With tariffication, Japan announced that it would reduce the annual increase in rice imports quota from 0.8 per cent to 0.4 per cent (682,000 tons in 2000) and apply a tariff of 351.17 yen/kg in 1999 (Choi and Sumner, 2009: 93). Moreover, the URAA allows Japan to add a markup to within-quota imported rice of up to 292 yen/kg when it enters Japan ((Dyck, *et.al*, 1999:14). Thus, in nut shell it can be concluded that to meet the commitments under URAA Japan led to the policy of tariffication of all the agriculture products including rice after 1999.

Domestic Support

Protection and support programmes have been used by the countries to support their agriculture sector and this leads to distortion of trade there by making market access difficult for the foreign commodities. URAA has therefore laid down regulations to reduce the domestic support that are trade distorting in nature. It classifies domestic

²² TRQ is a trade policy tool in which importation of agriculture commodities are allowed within the quota limit at low tariff rate and importation beyond the import quota limit is subject to higher tariff rate.

support programmes into three boxes, green, blue and amber based on their impacts on production and trade. Policies and subsidies that have minimum or no trade distorting impacts on production have been kept under green box and its reductions are exempted. They include measures decoupled from output, such as income-support payments, safety-net programs, payments under environmental programs, and agricultural research-and-development subsidies (Yoda, 2006:11). Policies that have limited impact on production hence impacting trade are included in blue box. The blue box contains direct payments under production-limiting programs, such as payments based on acreage, yield, or number of livestock in a base year (Ibid: 11). And all support policies that impact production and are trade distorting in nature are kept under amber box and are subject to reduction. The amber box includes input subsidies, direct production subsidies, and support prices that impact production. URAA emphasises on reduction of amber box supports by reducing Aggregate Measurement of Support (AMS). The URAA requires a 20 percent reduction in the total Aggregate Measurement of Support (AMS) for all developed members (Davis and Oh, 2007:27) during the period of implementation (1995-2000).

Japan started providing domestic support and protection to its agriculture sector since 1960s. The protection insulated the domestic market from exporters. However, the trade friction compelled Japan to abide by URAA and gradually reduce its protection level and open its market. In 1995 Japan had amber box programs for rice, barley, wheat, soybeans, sugar, starch, beef and veal, pork, meat of swine and silkworm cocoons (Godo and Takahashi (2008:19). But as Japan began implementing the URAA the AMS began to decline as shown from Table 18.

Table 20: Japan’s AMS (amber box), (in billion yen), 1995-2000

YEAR	1995	1996	1997	1998	1999	2000
Current Total AMS	3,507.5	3,329.7	3,170.8	7,66.5	7,47.8	7,08.5
Commitment	4,800.6	4,635.0	4,469.5	4,304.0	4,138.4	3,972.9

Source: Godo and Takahashi (2008), “Japan: Shadow WTO Agricultural Domestic Support Notifications” IFPRI Discussion Paper 00822.

From Table 19 it can be seen that the total AMS was 3,507.5 billion yen and the commitment level was 4,800.6 billion yen, a slight reduction in the support to the agriculture and the gradual declining pattern continued till 1997. But in 1998 the AMS declined significantly declining to 7, 66.5 billion yen. This is because Japan simply abolished the administered price of rice under the Food Control Law after the Uruguay Round (Yamashita, 2015: 12). From 1998 the AMS is in declining trend there by indicating that Japan's amber box support measures have reduced and are within the commitment level under URAA. Thus, in order to compile with the commitments Japan made corresponding changes and reductions in the support and protection measures provided to its agriculture sector so that the market becomes open, easily accessible and conducive for the foreign countries to carry on their trade.

5.5 JAPAN AND THE DOHA ROUND OF WTO AGRICULTURAL NEGOTIATIONS

Although the Uruguay Round was very successful in negotiating the Agreement on Agriculture and bringing agriculture into the World Trade Organisation (WTO), many barriers and distortions still exist in agricultural trade (Honma,2000:1.1). To remove these existing barriers to trade so as to make markets increasingly accessible and moreover the commitments made by the members during the URAA agreement to continue negotiations on reforming the agriculture trade led to the launch of the Doha Round also called Doha Development Agenda (DDA), in November 2001 in Doha, Qatar. The objectives of the Doha round in case of agriculture has been to further reduce domestic support and export subsidies with the aim of eliminating it completely so that there is greater market access and trade is flourished. Moreover, other objectives of the Doha Round included issues related to non-trade concerns such as food security, food safety and multi-functionality of the agriculture.

Japan submitted its proposal on agricultural negotiations to the WTO in June 1999 (MAFF 1999a) and later presented a supplementary paper (MAFF 1999b). Japan's proposal states that the following three points should be included in the rules and disciplines of the forthcoming agricultural negotiations: the importance of the multi-functionality of agriculture, the importance of food security, and the need for impartiality in importing and exporting (Honma, 2000:1.8). Further, Japan proposal also included consideration for developing countries and consideration for consumers and civil society.

Multi-functionality of Agriculture

Multi-functionality of agriculture concept has been used by various countries to obstruct further liberalisation of trade and to maintain high level of protection for their agriculture. It has become a hindrance on the path of further negotiations on agriculture trade. The term “multi-functionality of agriculture” refers to the fact that agricultural production yields not only specific agricultural products but also positive external economy effects, such as the cultivation of water resources (Yamashita, 2006:5), rural development, cultural landscapes, and rural employment. For Japan multi-functionality of agriculture has become one of the main objectives of the agriculture policies. Japan believes agriculture adds value to society by: conserving land and helping to prevent floods, soil erosion and landslides; fostering water resources; preserving the natural environment by aiding the management of organic waste, the resolution and removal of polluted substances, air purification and the maintenance of bio-diversity and the preservation of wildlife habitats; preserving the scenic landscape; transmitting culture; providing rural amenities; maintaining and revitalising the rural community; and improving food security (MAFF 1999c) (Honma, 2000:1.8). Therefore, Japan in its negotiations in the Doha Round emphasised that certain level of protection and subsidies are important in order to preserve multi-functionality of agriculture.

Food Security

Food security has always been the most important objective of Japanese agriculture policies. For Japan food security means increasing the self-sufficiency ratio by increasing the domestic production. Japan’s self-sufficiency ratio has declined continuously from 79 per cent in 1960 to 39 per cent in 2013 and this has resulted to food insecurity problem for Japan. Japan states in its WTO proposal that it will rely on domestic production, food stockpiles and imports to achieve food security (Honma, 2000:1.10). However, it says an excessive dependence on imports should be avoided for the following reasons: world food supplies may become unstable in the short term and may become tighter in the medium to long term; agricultural trade has such unstable features because relatively low portions of output are currently being exported and the major agricultural products are only being exported by some specific countries; and large purchases by an economically dominant country at a time of food

shortage may have a negative impact on the international market (Ibid:1.10) and the declining agriculture sector and its production have made Japan to emphasize food security in the negotiation on agriculture. Further, Japan considers stockpiling of food can be used only to evade short term food crisis.

Therefore, Japan provides the rationale in the Doha negotiations that high level of protection and subsidies are necessary and important for the survival and growth of its agriculture sector. Without protection the agriculture sector which is in the continuous declining phase will decline further and this would lead to greater food insecurity in Japan.

Impartiality in Importing and Exporting Countries

Export subsidies are highly trade distorting and reducing it was one of the pillars for liberalisation of agriculture trade as per URRA. However, minimal emphasis has been given on the part of reducing the export subsidies and maximum importance was given on reducing protecting subsidies and trade distorting subsidies. In the Doha Round the food importing countries argued and made their proposal that emphasis should also be given on reducing export subsidies as there exist an imbalance between food importing and exporting countries.

Japan believes the Agricultural Agreement is much stricter on importers than exporters. For example, only a prior consultation obligation has been established concerning export prohibitions and restrictions (Article 12) and no rules have been set on reducing export taxes or comprehensively binding customs restrictions. On the other hand, all quantitative restrictions have been prohibited (Article 4-2), except for those given special treatment under Annex 5 and the general rules of the General Agreement on Tariffs and Trade (Honma, 2000:1.12). Thus, Japan made a proposal for balance in rules for importing and exporting countries.

Further, in the WTO Doha Round, Japan strongly resisted 100 per cent tariff caps and endeavoured to ensure that as many products as possible were treated as so called- 'sensitive items' (Yamashita, 2015:71).

In nut shell it can be said that Japan implemented the URAA by reducing trade distorting subsidies and protection but it is still criticized for providing high protection and support to its agriculture sector and hence obstructing the liberalization of

agriculture trade. Despite criticism Japan is one of the largest importers of food in the world. In the WTO negotiations Japan outlined its proposal on the basis of multi-functionality of agriculture, food security and imbalance between import and exporting countries so that it can sustain and help its agriculture sector grow and thereby make Japan food secured.

5.6 IMPORTS OF FOOD POST URAA AND DOHA ROUND

In 1994 Japan agreed to implement URAA and reduce trade distorting subsidies as well as protection provided to the domestic sector so that its market is easily accessible for the exporting countries. Therefore, the below given table will give an insight on the importation of food post URAA and Doha Round.

Table 21: Imports of Food items (1000t)

	RICE	Wheat	MEAT
YEAR	Imports (1,000t)	Imports (1,000t)	Imports (1,000t)
1,995	495	5,750	2,413
2,000	879	5,688	2,755
2,005	978	5,292	2,703
2,010	831	5,473	2,588
2,013	833	5,737	2,635
	VEGETABLES	DAIRY PRODUCTS	SOYBEANS
YEAR	Imports (1,000t)	Imports (1,000t)	Imports (1,000t)
1,995	2,628	3,286	4,813
2,000	3,002	3,952	4,829
2,005	3,367	3,836	
2,010	2,783	3,528	3,456
2,013	3,137	4,058	2,762
	FISH	EGGS	FATS AND OILs
YEAR	Imports (1,000t)	Imports (1,000t)	Imports (1,000t)

1,995	6,755	110	722
2,000	5,883	121	725
2,005	5,782	151	964
2,010	4,841	114	929
2,013	4,081	124	966

Source: MAAF. * Data not available

From table 20 it can be seen that imports of rice was 495 thousand tonnes and when rice market was opened as per the URAA importation has increased from the year 2000 with minute declines. In case of wheat, meat, vegetables, eggs, fats and oils and diary production the imports has increased mainly because of the change in dietary patter into western food pattern. Further, it can be seen that the imports of soybeans and fish has declined most importantly decline in consumption of these food items due to change in food pattern.

In 1995 after agreeing to compile with the URAA agreements, Japan as per minimum import quotas began importing rice. Furthermore, an important factor that led to increase in food imports was the sharp decline in the prices of the imported food due to the appreciation of the yen against US dollar. The Japanese yen appreciated drastically after the Plaza Agreement of 1985, from 235 yen per US dollar in 1985 to 194 yen per US dollar in 1995 (Kako, 2010:105). Thus, it became cheaper to import food and hence led to increase in import of food in Japan. Therefore, despite high level of protection importation of food diversified as well as increased over the period of time.

5.7 DOMESTIC PRODUCTION AND IMPORTS OF FOOD

Over the period of time Japan has been criticized by its trading partners for providing high support and protection to its agriculture sector. But despite support and protection Japan is one of the largest importers of food in the world yet Japan is continuously criticised by them for not opening its domestic market as they argue that opening of the market and liberalising the agriculture trade will ensure food security for Japan. Food security for Japan means increasing the self-sufficiency ratio by increasing the domestic production of agriculture commodities. Therefore, the below given table will help to analyse as whether importation of food has helped Japan to ensure food security by helping to increase domestic production.

Table 22: Domestic Production and Imports of Food

	RICE		WHEAT	
YEAR	Domestic production (1,000t)	Imports (1,000t)	Domestic production (1,000t)	Imports (1,000t)
1960	12,858	219	1,531	2,660
1970	12,689	15	474	4,621
1980	9,751	27	583	5,564
1990	10,499	50	952	5,307
2000	9,490	879	688	5,688
2010	8,554	831	571	5,473
2013	8,718	833	812	5,737
YEAR	MEAT		VEGETABLES	
YEAR	Domestic production (1,000t)	Imports (1,000t)	Domestic production (1,000t)	Imports (1,000t)
1960	576	41	11,742	16
1970	1,695	220	15,131	98
1980	3,006	738	16,470	495
1990	3,478	1,485	15,740	1,551
2000	2,982	2,755	13,670	3,002
2010	3,215	2,588	11,730	2,783
2013	3,283	2,635	11,946	3,137
	DAIRY PRODUCTS		SOYBEANS	
YEAR	Domestic production (1,000t)	Imports (1,000t)	Domestic production (1,000t)	Imports (1,000t)
1960	1,939	237	418	1,081

1970	4,789	561	126	3,244
1980	6,498	1,411	174	4,401
1990	8,203	2,237	220	4,681
2000	8,414	3,952	235	4,829
2010	7,631	3,528	*	*
2013	7,448	4,058	*	*
	FISH		EGGS	
	Domestic production	Imports	Domestic production	Imports
YEAR	(1,000t)	(1,000t)	(1,000t)	(1,000t)
1960	5,803	100	696	0
1970	8,794	745	1,766	51
1980	10,425	1,689	1,992	49
1990	10,278	3,823	2,420	50
2000	5,736	5,883	2,535	121
2010	4,782	4,841	2,506	114
2013	4,286	4,081	2,522	124
	FATS AND OILS			
	Domestic production	Imports		
YEAR	(1,000t)	(1,000t)		
1960	581	220		
1970	1,117	342		
1980	1,797	443		
1990	2,360	572		
2000	2,200	725		
2010	1,980	929		
2013	1,946	966		

Source: MAFF. * Data not available.

From table 21, it can be seen that the domestic production of rice has declined if compared to 1960 mainly because of decline diversion programme of rice to other

crops whereas its imports have increased from 2000 because of opening of its domestic market as per URAA. Domestic production of wheat has declined with minute increase in between but at the same time the imports have increased since the 1960s. The change in diet pattern of the Japanese people has been one of the main reasons from increase in consumption of the wheat and as domestic production has declined to meet the demands the Japan imports wheat. In case of meat and vegetables domestic production as well as imports has increased. The production of dairy products has increased and it recent years minute decline in the production can be seen, where as imports has increased continuously. From the table it can be seen that the domestic production of soybeans has declined drastically where as imports has increased sharply. In case of fish the production increased till 1990 and from then the production has declined reaching 4,286 thousand tonnes in 2013. Imports of fish have increased till 2000 and since then the imports have also declined. Further, domestic production of egg has increased since the 1960s and at the same time the imports of eggs has also increased. Domestic production of fats and oil has increased till 1990 reaching 2,360 thousand tonnes but after 2000 there has been a gradual decline however, the imports have increased since 1960.

In sum it can be said that domestic production of wheat, meat, vegetables, dairy products, eggs and fats have increased and their imports have also increased. It clearly shows that since 1960s the demand for these food have increased but domestic production has not been able to meet the demand therefore, the imports have increased thereby making Japan dependent on imports. However, in case of soybeans and fish the domestic production has been declining therefore, through imports, which have increased, demands for these items are met. Further, domestic production of rice has decreased and imports have increased from 2000 onwards. The decline in production is mainly due to the rice diversion programme and increase in imports is mainly because Japan agreed to open its rice market as per the URAA otherwise the imports were very less.

Importation of food before Second World War was limited but it was post war period particularly during the economic growth period that the importation of food increased. The economic growth period led to rise in per capita income of the people and consequently people's dietary pattern changed. However, at the same time the domestic production was on decline and to meet the demands Japan began importing

food. Although, importation was increasing and domestic production was decreasing Japan started providing strong support and protection to the domestic agriculture market so that the sector grows as for Japan increasing domestic production meant ensuring food security. Despite insulating its domestic market Japan became one of the largest importers of food in the world. Moreover, the exporting countries started criticising and mounting pressure on Japan for insulating its market. Therefore, to compile with the pressure Japan agreed to the URAA in 1994 and implement the agreement from 1995. As per the URAA it tariffied non-tariff barriers and started reducing subsidies that hindered agriculture trade as well as opened its rice market. Yet Japan is been criticised further and is pressured to reduce trade distorting subsidies and open its market further. However, Japan has been using these trade tools to sustain and increase its agriculture production as this will help in increasing the self-sufficiency ratio thereby ensuring food security for Japan. The threats associated with importation are another factor that has made Japan to use protection for its agriculture sector. The opening of market has further led to increase in imports of food and whereas domestic production has declined continuously thereby leading to decline in self-sufficiency ratio making Japan unsecured in terms of continuous and stable supply of food.

CHAPTER 6

CONCLUSION

Food security as a concern emerged during and aftermath of the Second World War, but during the world food crisis of 1970's it got formulated into a concept and "food security got defined as "scarcity of providing food to people as a nation". Although, initially it was thought that the problem is only concerned with the developing countries but with time it was realised that the food security problem affected the entire world. Furthermore, the problems of rising population, poverty, a destabilizing global economy, shrinking of agriculture lands, low agriculture productivity, volatile food prices and the affects of climate change increasingly brought new challenges to the world with respect to availability of sufficient amount of food to the people continuously at affordable prices. Thus, ensuring food security has become a major concern for the entire world. However, within this larger framework of problems of food security, the case of food security in Japan is different from those faced by the world. For Japan ensuring food security generally means increasing self-sufficiency ratio through continuous and stable supply of food from the domestic production.

Japan is an island country and most areas are mountainous with steep terrain and heavily covered with forest. In 2013 out of the total land in Japan 66.3 per cent was forest area, 3.1 per cent residential area and 12.0 arable land. Therefore, limited availability of land has been the most important factor for limited cultivated land and this in turn has been a main hindrance for limiting the expansion of arable land in Japan. Rise in population, rapid industrialization and urbanization added extra pressure on the limited available land such that the cultivated land reduced whereas the ageing population, lower birth rates, fewer full-time farmers, increased in part-time farmers focussed on rice farming, fewer large scale farms and more small-sized farms contributed to the declined in the agriculture production of the country.

Decline in agriculture production for Japan began from the period of rapid economic growth of 1960. At the same time the economic miracle also brought changes in the dietary pattern from traditional to western pattern of the Japanese people and as a result Japan began importing food to fill the space created by the reduced domestic agriculture production and to meet the new dietary needs of the people. Accordingly, the self-sufficiency ratio declined rapidly. As self-sufficiency ratio fell on the one

hand and on the other hand importation of food increased to unprecedented level. Consequently, Japan became one of the largest importers of food in the world and today it is the fourth largest importer of food in the world. However, imported food has been the main life line in terms of supply. Yet Japan emphasizes on increasing the domestic agriculture production and ensuring food security. This is mainly because Japan has already experienced the vulnerability of depending on imports. The food crisis, Nixon's embargo on exports on soybeans, Arab oil embargo of 1970s made Japan vulnerable to crisis. Thus, this study has made an attempt to examine the various factors responsible for food security problems in Japan and to analyse the steps taken by the Japanese government through agriculture policies so as to ensure food security. Further, this study has also examined the importation of food by Japan to see as an alternative way to ensure food security.

Japan's dietary pattern changed during the high economic growth period from traditional pattern comprising of rice, soup, fish and seasoned vegetables to western pattern dominated by meat, wheat products, dairy products and variety of vegetables. The process of dietary transition is said to be a universal phenomena that occurs when the societies are in the process of development and modernization and this transition in the dietary pattern in Japan is addressed in Chapter Two, which is titled as "Transition in Japanese Dietary Pattern", The main purpose of the chapter was to delve and examine the process of transition in the diet pattern of the Japanese people and its impact on ensuring food security in Japan. Following this the main thrust of the chapter was to seek an answer to the first research question "*To what extent has the change in dietary pattern of Japanese people led to the problem of ensuring food security and what are the reasons behind such a shift?*". To answer the above question the chapter initiated discussion with a historical overview of the diet transition in Japan that occurred before 1960. Further, it examined the consumption pattern of major food items that formed the part of the traditional diet pattern and the of the western diet pattern since 1960. The diet transition took place in a short span of time and the chapter attributes such transition due to the following reasons like rise in per capita income of the people in Japan brought by rapid economic growth of the country, rapid process of urbanization, increase in number of working women in the society, emergence of super markets, introduction of Mc Donald, Kentucky Fried Chicken and other fast food stores, ageing population who often rely on pre-cooked

food sold by various convenient stores and increase in the number of Japanese travellers to other countries.

Further, the chapter examines the self-sufficiency ratio of the food in Japan and concludes that due to transition in the diet pattern the self-sufficiency ratio of the food of traditionally consumed has declined rapidly and this has led to the food security problems in Japan. As for the food that forms the part of the western diet pattern the self-sufficiency is naturally low and this has only enhanced the problem for Japan in ensuring food security. This, chapter shows that due to change in dietary pattern the consumption of traditional food particularly that of rice which is the main staple food for Japanese has declined. The consumption of western food dominated by meat, wheat products, oils and fats, dairy products and other foreign vegetables has increased. And food self-sufficiency ratio has decreased significantly causing food security problems in Japan. Thus the first hypothesis “*Change in dietary pattern has aggravated the problem of food security in Japan*” is validated.

In Chapter Three titled “Agriculture policies and its Impact on Food Security”, the main thrust was to delve into two research question, *first given such a change in the dietary pattern, what were the various steps taken by the government in ensuring food security and how successful has it been? Second, what were the impacts of various agricultural policies on enhancing agricultural productivity and ensuring food security in Japan?* In doing so the chapter begins by giving a brief analysis of the total cultivated land available in Japan and it has been found that in 1965 the cultivated area was 6.08 Mha and in 2013 it had declined to 4.54 Mha. Following this the chapter further examines the agrarian structure of Japan. And finds out that the farm sizes has shrunk and there are more number of people who hold lands under 0.5 hectares than the people who holds lands above 2.0 hectares. It also shows that the labour force in Japan has drastically declined and most of the farmers are old and ageing rapidly. It has also been found that full-time farmers are less compared to part-time farmers. Thus, the chapter shows that all these factors have led to the overall decline in the agriculture production of the food.

Further, this chapter delves into the steps taken by the government in combating the problems associated with the agrarian structure so as to ensure food security. The chapter examines the agriculture policies enacted by the Japanese government and

finds that the agriculture policies provided huge support to farmers particularly rice growing farmers. The policies has been the main cause for creating part-time farmers holding small scale land and this has acted as hindrance in enlarging farms so as to make farms economically viable. Thus, the second hypothesis “*Agriculture policies of Japan are effecting food security of Japan*” is validated. This chapter shows that agriculture polices has not helped Japan ensure food security instead it has further led to decline in agriculture production.

Having said that agriculture policies have in fact not helped Japan in ensuring food security. It has been furthered by a strong nexus between agriculture and politics in Japan. Therefore, Chapter Four titled “Agriculture and Politics in Japan” has made an attempt to understand the nexus between agriculture farmers and political set-up of Japan and to find an answer to the fourth research question “*How has politics influenced food security*”. In doing so the chapter first delves into farmers’ representation in politics in Japan and concludes that there were many organisations that represent farmers after the Second World War but with time most organisation perished, however, an organisation named *Nokyo* (Japan Agriculture Cooperatives) formed in 1947 became the sole and the most important organisation in Japan. It not only represents the farmers but plays an important role in the formulation of the agriculture policies in favour of farmers. This is mainly because they form the vote bank for the Liberal Democratic party which has been in power since 1955. Further, it has been found out that in Japan since Second World War the government has controlled everything related to agriculture such as production, distribution and selling. And this task the government does it through MAFF. Thus, MAFF also has a strong connection with the agriculture cooperatives and the Liberal Democratic party. Therefore, the agriculture policies that are framed has not been able to ensure food security but has only helped the part-time farmers. Hence, the third hypothesis “*Agricultural politics is one of the causes for deterioration of food security in Japan*” is validated.

Chapter Five titled “Agriculture and Trade: Importation of Food” main thrust is to understand as whether importing food will help Japan to ensure food security. The chapter begins by giving an overview of the importation of food in Japan before and after 1960. It can be seen that after 1960 the importation has increased to unprecedented level. Further, it delves into Japan initiative in opening of the

domestic market due to the pressure and criticism from exporting countries. Despite criticism of being closed country it is in fact one of the largest importers of food in the world and this has not helped Japan to ensure food security. Thus, the fourth hypothesis “*importation of food items will ensure food security in Japan*” is not validated. This chapter concludes that importation has in fact caused self-sufficiency ratio to decline further.

To sum up, the food security problem in Japan has been escalated by factors like problems of agriculture structure which includes ageing farmers and declining overall farm population, decreasing fulltime households, increasing part-time farmers, small land holdings, lack of big farms; dietary change, agriculture losing its position as a lucrative opportunity, importance to rice farmers and dependence on imports. Despite these factors the greatest disadvantage for Japan has been availability of limited land for cultivation. Consequently, the domestic production declined thereby leading to decline in self-sufficiency ratio

To solve the problems of agriculture sector the Japanese government enacted various policies. These policies were not successful in reforming the agriculture sector and increasing the self-sufficiency ratio. But it achieved the objective of raising the income level of the farmers and in the process strong support and protection began to be provided to the agriculture sector. This in turn led to further decline in the agriculture production and self-sufficiency ratio. Moreover, the change in dietary pattern and the low agriculture productivity made Japan dependent on imported food to meet the demands of the people.

The agriculture policies despite, not being successful in improving the agriculture production and increasing the self-sufficiency level so as to ensure food security continued to exist mainly because of the political nexus among farmers, *Nokyo*, politicians particularly of LDP and MAFF. This political nexus has not only stopped the reforms of the agriculture structure instead it has led to increase in part-time farmers farming rice only. Thus, this has also led to overall decline in self-sufficiency ratio in Japan and thereby the problem of food security persisted.

The weakening or breaking of nexus will help in reforming the agriculture structure and this will lead to consolidation of small farms into economically viable farms, as a result part-time farmers will be on decline whereas that of full-time farmers

will be on rise consequently, agriculture production will increase. Moreover, the support and protection to the rice production should be minimized and emphasis in the form of benefits and non-trade distorting support and protection should be given to the farmers producing food items other than rice.

Despite strong protection to the domestic market Japan is one of the largest importers of food in the world. Importation has only provided the accessibility and supply line for food to Japan and will continue to provide but it has not led to increase in domestic production and instead contributed to the decline in self-sufficiency ratio. Opening of the domestic market further will ensure availability of cheap and variety of food to the Japanese people but will not ensure food security. Therefore, imports can be used like a support to the domestically produced food to ensure food security.

To ensure food security Japan emphasizes on increasing self-sufficiency of food items through increase in domestic production along with importation of food and stockpiling. However, self-sufficiency has not increased since it started to decline from 1960s and food imports has its own limitations because it depends on external factors like transportation, production in exporting country, rise in prices of the commodities, food safety and others. Imports therefore, are vulnerable to many factors and relying on it excessively will make a country vulnerable and it will further lead to food insecurity. Stockpiling can be used only during the immediate and short time crisis, as stockpiling cannot be done for a long period of time. Thus, though Japan wants to ensure food security through domestic production, imports and stockpiling but in order to ensure food security increasing self-sufficiency of traditionally consumed food would be the best alternative. During the crisis despite change in taste to survive people can revert to traditionally consumed Japanese food.

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