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**Agricultural cooperatives in Israel**

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More information on the Agrarian Structures Initiative and its projects is available here: <http://www.fao.org/europe/agrarian-structures-initiative/en/>

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## Introduction

Agricultural cooperatives are responsible for the majority of agricultural production and services in Israel (approximately 80%). They are the product of ideology, government policy and the implementation of effective work processes. They have been prevalent in Israel since the beginning of the 20<sup>th</sup> century, allowing individuals with limited means to pull together and establish stable and successful production and service cooperatives, laying the foundation for some of Israel's most valuable resources – quality agricultural produce and agricultural innovation.

Government policy in Israel was initially very supportive of agricultural cooperatives in the country, investing considerable funds in developing cooperative activities and positioning them as the main production channel for agricultural produce. This allowed agricultural cooperatives to enjoy fast growth, expand activities and accumulate significant political power, essentially monopolizing the agricultural market.

From the late 1970's Israel began a process of liberalization. Government policy changed, attempting to minimize government intervention in the market. It reduced financial support to agricultural cooperatives and initiated steps to increase competition. Most agricultural cooperatives in Israel were slow to adapt to these new market conditions, accumulating massive debts in an attempt to continue to function as they had in the past. By the end of the 1980's it was clear that rehabilitation plans were necessary in order to save the cooperatives and the banks that funded them and effectively stabilize the Israeli economy.

Since then, agricultural cooperatives in Israel have undergone many structural changes, becoming decentralized, individualized and specialized. Specifically, agricultural service cooperatives have become more flexible, vertically integrated and market oriented.

This paper will review the Israeli experience in this field, from inception until present day, in hopes that it will offer important insight into the role of government in the evolution of agricultural cooperatives and the measures which need to be taken in order to maintain an agricultural cooperative under different market conditions.

## The beginning: ideology and necessity

Israel has never been a fertile ground for agricultural activities – its climate consists of two distinct seasons – a cold and somewhat-rainy winter and a hot dry summer, with very short and unstable transitional periods between them. Aside from the difficult climate, Israel includes many desert areas which are hard to transform into vibrant agricultural centers. Moreover, Israel has not been blessed with an abundance of water resources - a key ingredient for most agricultural activities, and thus has to rely mainly on the unstable supply of rainwater.

In addition, until the mid 19<sup>th</sup> century, Palestine, a province of the Ottoman Empire at the time, was largely a disease-infested swampland. At this point in time, large groups of Jewish immigrants migrated to Palestine from their home countries (known as the first "Aliyah"), with a vision of founding a Jewish state. Knowing that this future country would require agricultural resources for sustenance, and despite the fact that none of them had an agricultural background, many of them delved into agricultural work. But both swamps and rampant diseases would have to be eliminated before agricultural activities could be developed in the region.

At first, farmers did not come together in cooperative communities, but rather worked the land individually. One key factor was still missing before the idea of agricultural cooperatives in Palestine (and in the future – Israel), could come into fruition - ideology.

At the turn of the century, the Second Aliyah brought another wave of Jewish immigrants to Ottoman Palestine, primarily idealists from the Russian Empire. They left their home countries mostly for financial reasons - the industrial revolution made many traditionally Jewish professions obsolete. They also migrated in order to escape the rise in anti-Semitic behavior directed at them during those years. Most of them migrated west and settled in the USA and the UK, and a small percentage came to Ottoman Palestine. These immigrants, most of whom were influenced by revolutionary ideals they were exposed to in eastern Europe, belonged to socialist movements such as Poalei Zion (meaning: "Workers of Zion") in their home cities. Their strong cooperative values and socialist ideology were the final ingredients needed to motivate the creation of agricultural cooperative Jewish settlements in Palestine.

The first Jewish agricultural cooperative, "Kvutzat Degania", was established in Palestine in 1909. Since the settlers themselves had no personal equity, the land on which this settlement is located, at the southern end of the Sea of Galilee, was purchased with money donated by Jewish communities around the world. This was the case with all the agricultural cooperative settlements established before Israel became a country. A number of Jewish institutions were responsible for utilizing money donated by Jews around the world in order to develop the Jewish community in Israel. These organizations financed the construction of the settlements and the acquisition of machinery, with the settlers themselves enjoying free residency in the settlements in return for work. In effect, agricultural cooperative settlements were a solution to poverty, lack of education and lack of employment opportunities - problems many of the Jewish settlers in Palestine faced at the time.

The development of Jewish agricultural settlements, which began with the second Aliyah, grew in accordance with the arrival of new immigrant in the Aliyot (plural for "Aliyah") that followed, with the third Aliyah (in the early 1920's) and the fifth (in the 1930's) specifically, contributing tremendously to the establishment of new settlements mostly along what would

later become the northern border of Israel. During the 1940's new agricultural cooperative settlements were established in other parts of Palestine as well, especially in the south – near the Egyptian border and the Sinai desert, creating the southern borders of the future Israeli state in an attempt to influence the UN to declare Israel a state governing all of former Palestine.

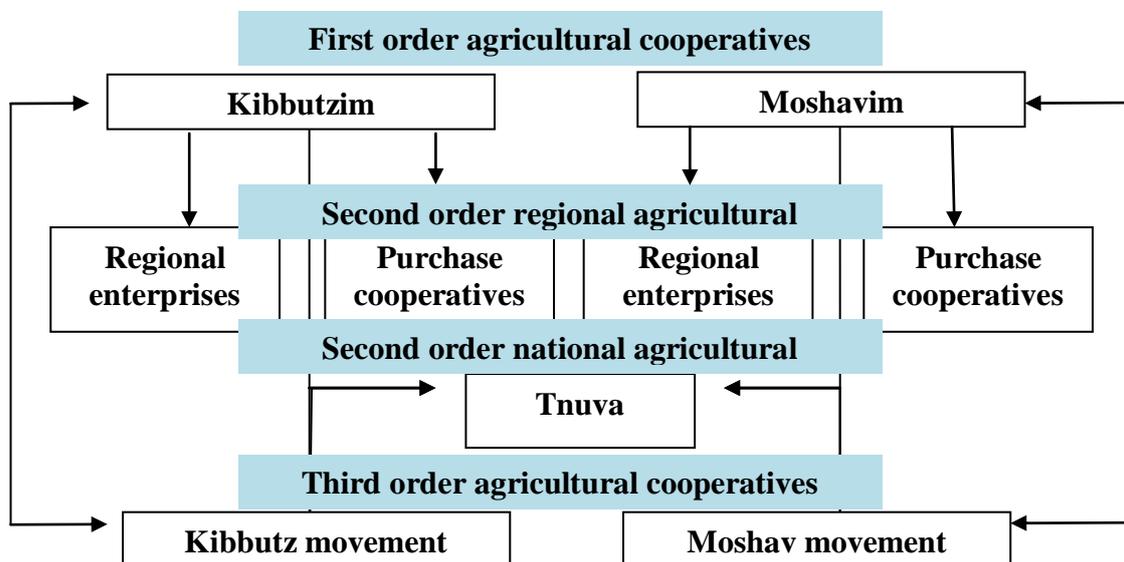
To summarize, if we ask ourselves why Israel became a nation of cooperatives, while agricultural cooperation is only a part of the sector in other countries, these early years (before the country of Israel was established) hold the answer. As mentioned, there was virtually no Jewish agriculture in Palestine until the 20<sup>th</sup> Century. Once the second Aliyah Jewish immigrants arrived, they lacked financial means, required employment and were greatly motivated to establish new settlements and through that take part in building a foundation for a Jewish country. The immigrants' socialist ideals influenced the type of settlements they established – creating commune-style living. To answer for their lack of financial means and need for employment, the Jewish institutions in Palestine chose to refocus these settlements and make them into worker settlements, developing agricultural activities within them. Up until the establishment of the state of Israel, the third, fourth and fifth Aliyot brought thousands of new settlers, many of which were more than happy to join the growing cooperative community and create new agriculture-focused cooperative settlements across Palestine, further developing the Jewish agricultural sector in a mainly cooperative framework. When the state of Israel was established, the pre-conceived stable cooperative agricultural structure continued to grow and naturally came to lead the agriculture sector, making Israel a nation of cooperatives.

## The agricultural cooperative structure in Israel

During the first three decades of the 20<sup>th</sup> century a multileveled cooperative structure was established by the Jewish agricultural community in Palestine and later – Israel (Figure 1). This structure remained stable up until the financial crisis of the 1980's (the current structure will be discussed later):

- first order agricultural cooperatives - Kibbutzim (plural for: "Kibbutz") and Moshavim (plural for: "Moshav")
- second order regional agricultural cooperatives - regional enterprises and purchase cooperatives
- second order national agricultural cooperatives - Tnuva
- third order agricultural cooperatives - Kibbutz and Moshav movements

**Figure 1 – Agricultural Cooperatives Structure**



*First order agricultural cooperatives:* The Kibbutz and the Moshav are two forms of Jewish settlements. The Kibbutz is a unique, worker-controlled, agricultural production cooperative and the Moshav is a service cooperative in which the members are the individual farmers which reside within the settlement. These cooperative settlements were strategically spread across Palestine, essentially creating the future borders of the Jewish state.

The Kibbutzim and the Moshavim were managed democratically, holding communal meetings in which members would vote on every decision. While Kibbutzim and Moshavim were similar ideologically and politically, there were some significant differences between their organizational structures, differences that in the future enabled Kibbutzim to maintain their agricultural cooperative status and even expand their activity, while simultaneously eliminating most Moshav agricultural cooperation.

The main structural difference between Kibbutzim and Moshavim was that Kibbutzim functioned as communes in every sense of the word - in Kibbutzim (Figure 2), all members were workers in all agricultural and service branches within the settlement, taking on different roles in the Kibbutz (managing a specific farm in the Kibbutz for instance) on

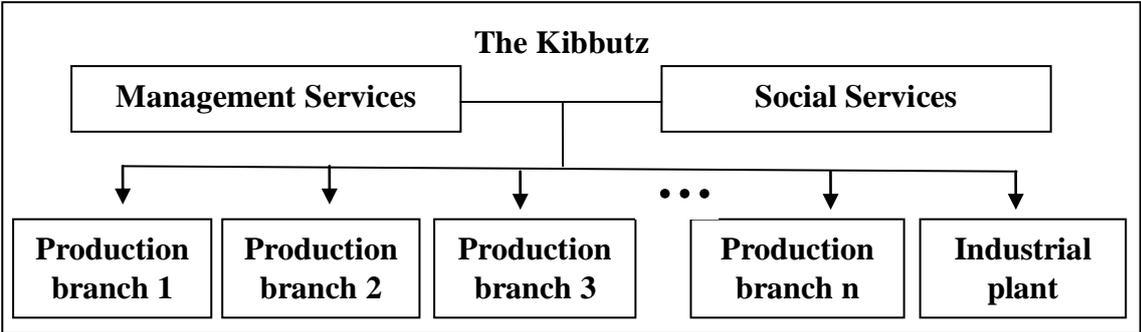
rotation. They split responsibilities equally, receiving no salary, but rather implementing an egalitarian system of distribution of limited resources which provided each of them a stipend in accordance with their living needs.

The Kibbutz also provided management and financial services to its members as well as consumer services which included accommodation, child care, education and medicine. Accommodation – Kibbutz members were allotted homes within the Kibbutz. Child care - all children in the Kibbutz lived together in a "children's home", separate from their parents and cared for by female Kibbutz members who were assigned to nanny duties at the child care facility. Education – a number of Kibbutzim in every area opened their own school, sending certain Kibbutz members to their Kibbutz movement's teaching seminar in order to professionalize them. Medicine – some Kibbutz members were sent to medical schools, paid for by the Kibbutz, so that upon the completion of their studies, they would return and provide the Kibbutz community with free medical services.

It is important to note that all the aforementioned work assignments were not made by personal choice of each member but rather decided upon as a group, in accordance with Kibbutz needs. Moreover, since Kibbutz members had very little to no personal assets (as mentioned, they received no income and did not own property), aside from the social services mentioned above, they could also freely take products for personal use such as clothes, toothpaste, hair-brushes and more, from the Kibbutz store. This store was run by Kibbutz members on rotation and the goods it provided the members were bought in bulk by the Kibbutz, according to purchase decisions voted on by the members during the communal meetings.

Additionally, all Kibbutz members ate together in a communal dining room and shared food preparation and cleanup responsibilities (in many cases, Kibbutz members did not even own a fridge in their allotted homes since they never ate alone). In terms of the social life in the Kibbutz, it too was very inclusive – all members celebrated together, initiated various communal activities such as singing clubs and essentially conducting their lives by an open door policy.

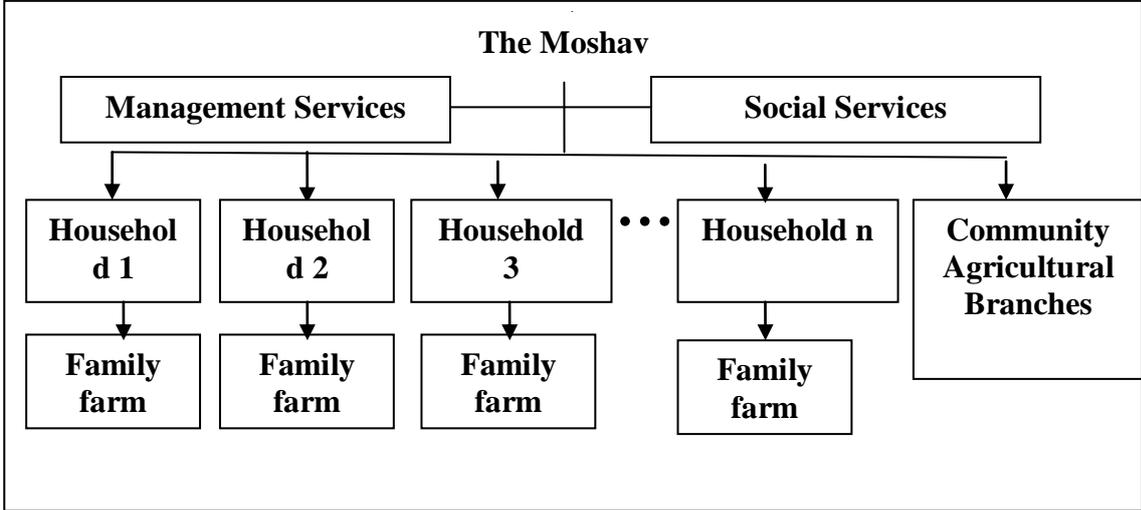
**Figure 2 – Kibbutz Structure**



Contrary to this, in Moshavim (Figure 3), the Moshav owned the rights to a number of communal agricultural branches, and in addition - each household was allotted land of equal size to work on individually, enjoying the income from selling its own produce. The Moshav was a very household oriented cooperative – members lived in family homes, where they worked, ate and slept. For the most part, the Moshav itself merely employed a joint framework for purchasing supplies, processing and marketing produce and joint ownership of

the means of production. In addition, as in the case of the Kibbutz, the Moshav also provided management and financial services to its members (Kislev, Lerman and Zusman 1976).

**Figure 3 – Moshav Structure**

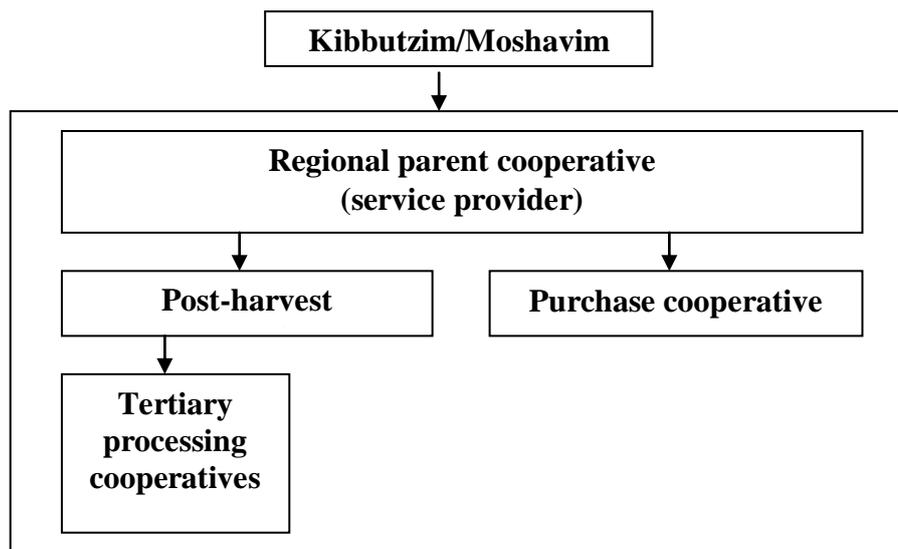


*Second order regional agricultural cooperatives:* These cooperatives included purchase cooperatives used to obtain supplies for agricultural activity in bulk and regional enterprises dealing primarily with post-harvest treatment. Until the 1980's crisis, groups of 14-40 Kibbutzim/Moshavim established 11 Kibbutz-owned second order agricultural cooperatives and 5 Moshav-owned ones. They enabled their owners, to jointly purchase and process produce at a lower cost than they would have done separately.

Second order agricultural cooperatives were first established in Israel in the 1920's. However, most were established during and after the 1940's, as the need for their centralized services grew due to the establishment of more and more first order agricultural cooperatives. As mentioned, Moshavim and Kibbutzim were the owners of these secondary agricultural cooperatives. As such, their representatives sat on the boards of the second order cooperatives and Moshav and Kibbutz members worked in them as well.

The second order cooperative structure was as follows (Figure 4): Owned by either Kibbutzim or Moshavim, the regional parent cooperative had several subsidiaries providing production related services to members. Regional purchase cooperatives bought agricultural input and food; they received payment from Kibbutz/Moshav members and paid suppliers. The purchase cooperatives also served as financial mediators in both the case of the Kibbutzim and the Moshavim, using private equity to improve credit conditions for members. Equity was accumulated by the second order cooperatives thanks to the commission received from transactions with suppliers or from the sale of agricultural products processed for the first order cooperatives.

**Figure 4 – Second Order Regional Cooperatives Control Structure**



While in Israel, mainly due to the fact that most farmers are united under a first order cooperative rather than working individually, second order cooperatives are owned not by the farmers themselves but by first order cooperatives, this is not the case around the world – in most instances, such as marketing milk and meat produce in Australia and New-Zealand and marketing citrus in the USA, the marketing cooperatives are owned by individual farmers. These farmers pool their resources together not for ideological reasons, but rather due to the economic benefits of such a structure (Prois 1956).

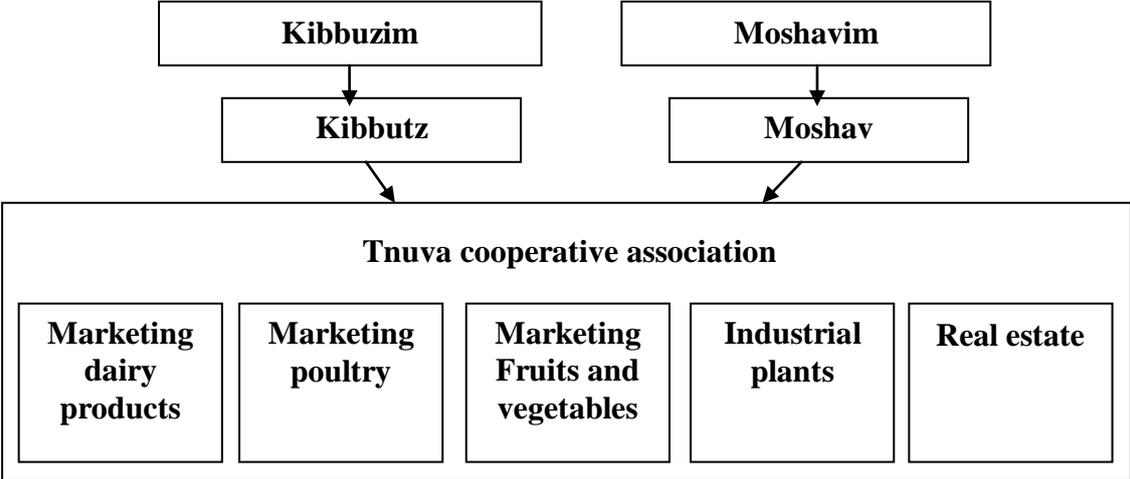
These benefits, in the case of milk products for example, include ownership of a marketing and distributing cooperative. Because milk has a short shelf life, a private distributing company would have much more bargaining power than a single farmer, who would be completely dependent on its services on a daily basis (if milk products are not distributed in time, they have to be disposed of). A cooperative owned by farmers however, would allow them to distribute and market produce at minimum cost. In other instances, inside and outside the agricultural sector, small business/farm owners pool their resources together in order to increase purchasing power, lower costs and respond better, as a unit, to competition with large entities.

*Second order national agricultural cooperatives:* These were second order cooperatives which operated on a national level and offered mainly marketing services. By far the largest second order national cooperative in Israel was Tnuva, a marketing cooperative which was founded in 1926 (Figure 5). Over the next few decades hundreds of Moshavim and Kibbutzim joined in cooperative ownership of Tnuva, receiving a share in the cooperative association and in return - marketing all their produce through Tnuva. Farmers transferred all produce to Tnuva on consignment, with the Kibbutzim/Moshavim receiving payment after produce was sold and a commission for Tnuva was deducted. The national Moshav and Kibbutz movements represented their groups and established Tnuva's management board. However, since Tnuva had hundreds of owners, its board was ineffective and decisions were made mainly on political grounds. Ineffective decision making did not pose a problem until the mid 80's, since Tnuva enjoyed a soft budget, as did all agricultural cooperatives in Israel, thanks to the mutual guarantee system which will be discussed below.

Tnuva marketed various agricultural produce - poultry, fruits and vegetables and even acquired some industrial plants for tertiary processing of agricultural produce. Its key asset

was its dairy harvesting enterprise which provided services for the vast majority of dairy farmers in Israel, utilizing economies of scale and eliminating any possible regional advantage certain farmers might have had over others. It also obtained, and in the future, developed, valuable real estate. It is important to note that since Tnuva was a large conglomerate, offering marketing services to most of the Israeli agricultural sector, it was not competitive.

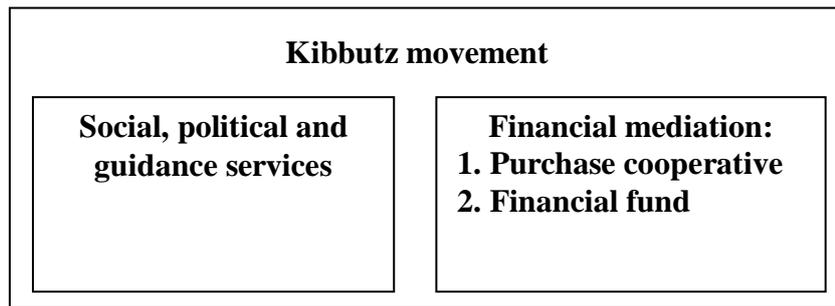
**Figure 5 –Tnuva - Control Structure**



*Third order agricultural cooperatives:* During the 1920's and 30's a main Moshav movement, three large Kibbutz movements and a number of much smaller Kibbutz movements were established, each grouping together dozens of cooperative settlements under a single leadership organization. The decision to unite under leadership organizations was a matter of necessity: Individual settlements faced financial and social difficulties and were interested in political representation to promote their ideas and develop their settlements. The movements gave their members access to various social services, providing financial mediation for members with the banks and accumulating political power which was used to lobby on behalf of members.

The movements established guidelines for their Kibbutzim/Moshavim, instructing them on various issues (how to create a business plan, for example). They also served as representatives for member interests when facing the government (IRS, The Ministry of Agriculture, The Ministry of Trade and Industry, and more). Since they began operation, the movements took responsibility for building and developing new Kibbutzim/Moshavim in order to grow in size and power. Employees in the movements were themselves members of the Kibbutzim and Moshavim, occupying various positions within the organization on a rotation basis.

## Figure 6 – Kibbutz Movements Structure



The Kibbutz movements, as represented in *Figure 6*, had two main functions:

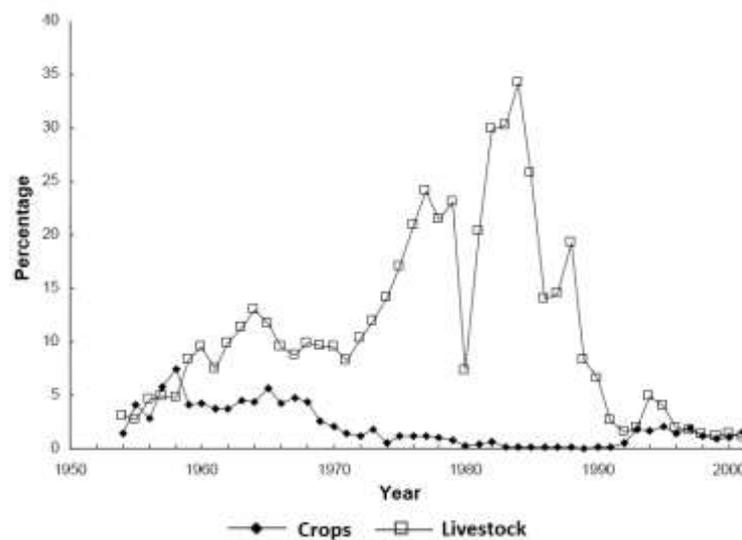
1. **Social, political and guidance services** – These included political representation, guidance services on issues relating to developing and managing a Kibbutz and social services such as nursing, education, planning and zoning and cultural events. These services were paid for through membership fees.
2. **Financial mediation** – This included a financial fund and a purchase cooperative. The purchase cooperative (which is similar to a consumer cooperative in general western terminology) focused on providing goods such as low-priced clothing and furniture to members. A movement's financial fund took out loans from the banks and distributed those funds to members (the Kibbutzim) under better loan conditions, essentially providing banking services to members. The national movements also received monetary deposits from individual Kibbutzim and accumulated funds. The funds accumulated from deposits were also used to finance loans to other members in need.

The Moshav movement's structure was not as elaborate as that of the Kibbutz movements. It provided similar social, political and guidance services to that of the Kibbutz movements, albeit on a smaller scale and it did not partake in financial mediation.

## Agricultural cooperatives in Israel – the early years

In 1948 the state of Israel was officially established. At this time 177 Kibbutzim had already been established (Central Bureau of Statistics 2008) and 77 Moshavim (Kislev 1989). Luckily for agricultural cooperatives, the newly formed government understood that developing stable agriculture was essential for sustaining a self-sufficient country, and so agricultural cooperatives received extensive support through tax reductions, protection from competitive import, large subsidies (Figure 7) and financial investments in the further development of agricultural technology. In addition, production quotas were established for every cooperative branch, thus ensuring there would be no overlap between cooperatives – no competition (Kislev 1990).

**Figure 7 – Government Subsidies to Product Prices Relative to Value of Output**



(Source: Kislev and Vaksin (2003), p. 15)

Unlike many developed countries around the world, such as the USA, where land is privately owned, 93% of the land in Israel is state-owned. The government manages its development and leases it to Kibbutzim and Moshavim for extended periods of times, with certain limitations (Kedmon 2012). These limitations include laws that prevent exchanging land rights between individuals, sub-leasing land, or dividing it between benefactors after death.

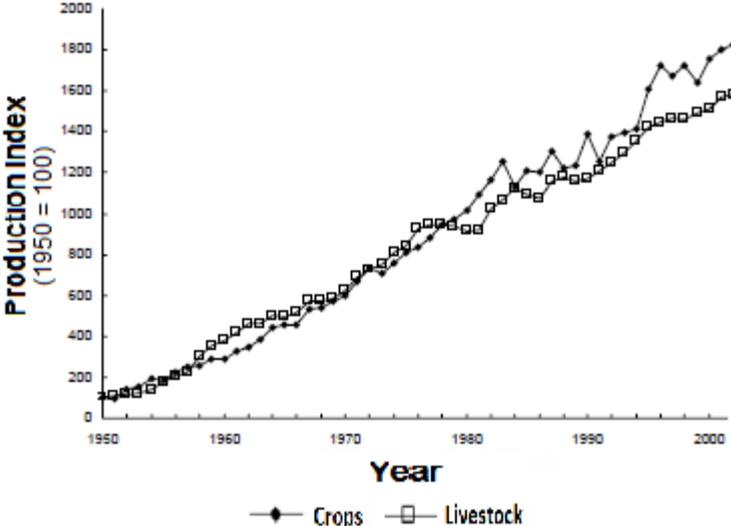
Since the land was not owned by Kibbutz or Moshav members themselves, a mutual guarantee system was implemented so that farmers could receive loans from banks even though they did not have personal assets as collateral. The idea behind mutual guarantees was that all members of one's own settlement, as well as all members of the national movement to which the Kibbutz/Moshav belonged, were guarantors for the particular member's loan, repaying the member's debt, if necessary (Kislev, Lerman and Zusman 1989).

This type of arrangement made it very easy for Kibbutz and Moshav members to take out loans for purchasing equipment and further developing their agricultural activities. Under this arrangement loans for personal purposes were easily available as well, enabling individuals to enjoy a more luxurious lifestyle by expanding homes, taking frequent vacations and more.

The banks were also content with this arrangement, making little effort to monitor loans given to agricultural cooperatives. The banks believed that even if these entities accrued a large debt, one which they would not be able to repay, the government would step in. This belief was substantiated in 1958, at which time, following an acute financial crisis in the Kibbutz movements, the government erased a large portion of the debt and redistributed the rest (Kislev, Lerman and Zusman 1989).

Thanks to government support, by the end of the 1970's, a mere three decades after Israel was declared a state, Israeli agricultural cooperatives managed to significantly increase their production (Figure 8), profitability (Figure 9) and technological level<sup>1</sup> (Figure 10), earning Israel an international reputation as a provider of quality agricultural produce and of invaluable agricultural knowledge and innovation.

**Figure 8 – Agricultural Production Output**

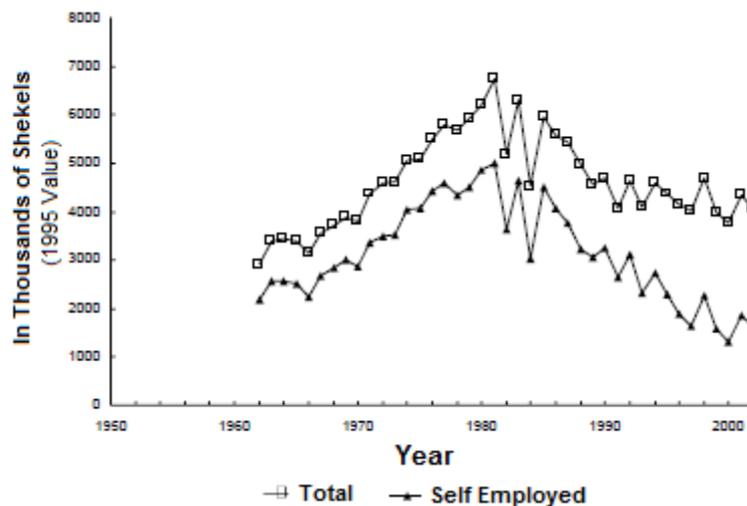


(Source: Kislev and Vaksin (2003), p.9)

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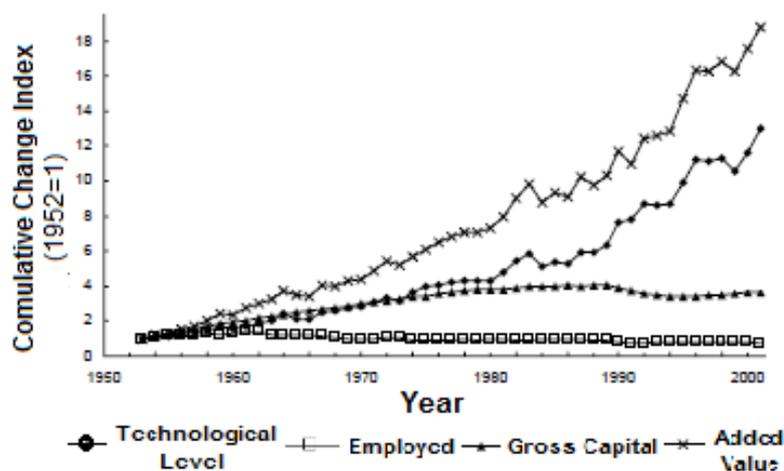
<sup>1</sup> The total yearly agricultural product (added value) is comprised of accumulated capital, number of employed in a given year and technological advancement (or technological level). Technological level is the difference between the actual added value reported for each year and the expected added value for that year (found using the Cobb-Douglas production function with reported values of accumulated capital for that year and number of employed as variables in the function).

**Figure 9 - Income for Self-Employed and Employees in Agriculture**



(Source: Kislev and Vaksin (2003), p.21)

**Figure 10 - Technological Level**



(Source: Kislev and Vaksin (2003), p.24)

During this time five main agricultural branches developed in Israel – field crops mostly around Jerusalem, in the south and in the northern region of the country (these field crops included cotton which reached its peak by the end of the 1970's with 60,000 ha fields designated to it), flowers mostly around Jerusalem and in the southern regions, vegetables, potatoes and melon fields mostly in the south, citrus grown mainly in the center of the country as well as both in the north and in the south and other fruits grown mainly in the northern regions. In terms of growth rate for the above - land used to grow vegetables, potatoes and melons grew by almost 300% from 13,100 ha in 1950 to 35,500 ha in 1980, citrus fields grew by almost 300% from 13,500 ha in 1950 to 39,600 ha in 1980 and land used for other crops exhibited similar growth. In general, land used for agricultural production grew by almost 300% from 150,000 ha in 1949 to 440,000 ha in 1977. The amount of machinery in agricultural work, for example – tractors, also exhibited large growth of almost 4000% from 680 tractors in 1948 to 26,800 in 1980 (data compiled from the Census of Agricultural Assets performed by the Ministry of Agriculture, different years).

However, the late 1970's mark the end of the uninterrupted hegemony agricultural cooperatives had over the Israeli market. At this time government policy began to change, now making liberalization a priority. This, along with several other issues (which will be discussed below), led most agricultural cooperatives into a deep financial crisis which required them to undergo massive restructuring in order to stabilize.

## Crisis: causes and consequences

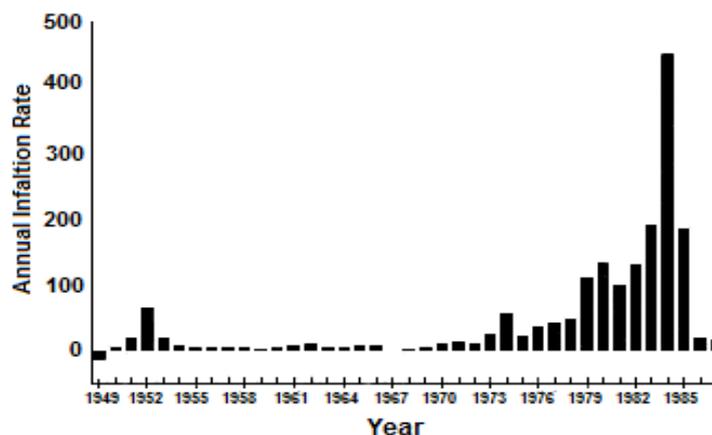
### Causes

By 1985 most agricultural cooperatives in Israel were in major financial crisis. The Kibbutzim, Moshavim and their respective movements accrued billions of dollars of debt to the banks. The crisis was profound, so much so that there was a real chance that the Israeli banking system would collapse without government intervention.

There were various contributing factors in the development of the financial crisis, the most important ones being the world oil crisis in the 70's, major changes in government policy and the fact that the agricultural cooperatives were slow to adapt to new market conditions dictated by those policy changes. Further exacerbating the situation were factors which included the mishandling of the mutual guarantee system by both the agricultural cooperative entities and the banks, which allowed Moshavim and Kibbutzim to receive loans they were then unable to repay. Another important factor was the fall of the stock exchange market in Israel in 1983, in which the Kibbutz and Moshav movements were heavily invested. In short, the causes for the crisis lay on the shoulders of three entities: the government, the banking system and the agricultural cooperatives with the 1970's oil crisis and its aftermath looming over. A detailed discussion of each of their roles follows.

*The oil crisis:* Since the early 70's, the world was facing an oil crisis - the oil-producing countries began coordinating prices, causing a surge in oil prices, which in turn caused an increase in inflation rates. Furthermore, the oil-producing countries, which now had a surplus in funds, began investing it in various locations worldwide, creating an excess in money supply. Some of that money was channelled to Israel, further contributing to the increase in inflation rates in the country (Figure 11).

**Figure 11 - Inflation Rate**



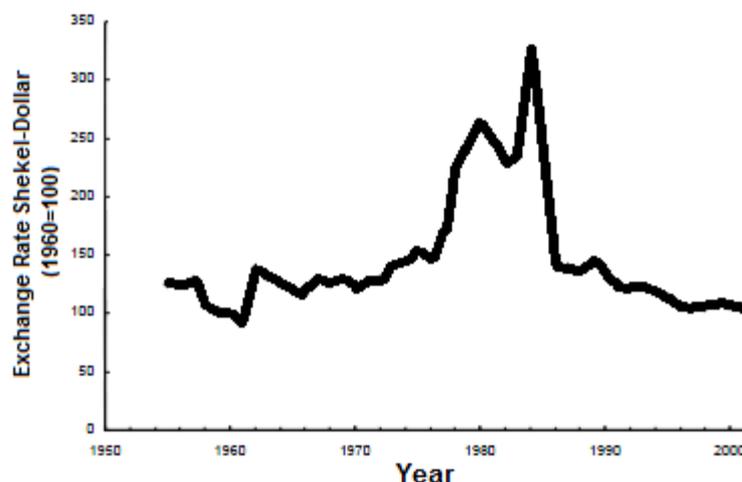
(Source: Kislev, Lerman and Zusman (1989), p.3)

*The role of government policy:* Government policy during the 70's also contributed to the increase in inflation rates by printing money to close deficits in the budget.

In May 1977, for the first time since Israel was established, the liberal party "Likud" won the national election. The Likud not only continued the policy of governments prior of financing government activities through deficits which were then closed by printing money, but further increased those deficits, printing more money, thus contributing to the continued rise in inflation rates (Figure 11, above). In addition, unlike prior governments, the new government was set on implementing drastic changes in the Israeli economy and attempt to minimize its involvement in market activities. Some of these changes and their outcomes are listed below:

- **Changes in currency mobility** - The first major steps taken by the Ministry of the Treasury were the removal of certain restrictions on currency mobility and implementation of floating exchange rates<sup>2</sup>. As a result, approximately 600 million dollars, which were being held by Israeli's abroad, entered the country, creating a monetary flood and throwing the country into an inflationary spiral (Navon 2010). Figure 12 exhibits the massive jumps in the Shekel-Dollar exchange rates in the late 1970's and mid 1980's.

**Figure 12 - Shekel-Dollar Exchange Rate**



(Source: Kislev and Vaksin (2003), p.13)

Annual inflation rates increased continuously, from 40% in 1977 to 110% by 1979 and ultimately 450% in 1984 (Navon 2010) (Figure 11 above)). This had a negative impact on production based entities such as first and second order agricultural cooperatives, as they need stability and long term planning in order to operate successfully. Simultaneously, in terms of debt, the high inflation rates eroded all debts accrued by the cooperatives until the inflation rate was reduced by the government in 1985 (Kislev, Lerman and Zusman 1989).

<sup>2</sup> Until 1977, the economic policy in Israel was based on social democratic values and so exchange rates were fixed with large changes implemented every number of years mainly in order to adjust for the depreciation in value of the currency. From mid- 1975 until the 1977 election, the government initiated a "crawling depreciation" policy through which frequent, but small, depreciations were implemented. Additionally, during the 1950's-60's, government established a number of exchange rates – for exporters, importers, travelers and more, exchange rates which were determined based on government decisions to incentivize certain foreign exchange activities over others outside the official exchange rate. After the 1977 election all exchange rates were united into one single floating exchange rate.

In addition, export incentives were cut drastically with the removal of restrictions on currency mobility in 1977 (Figure 13).

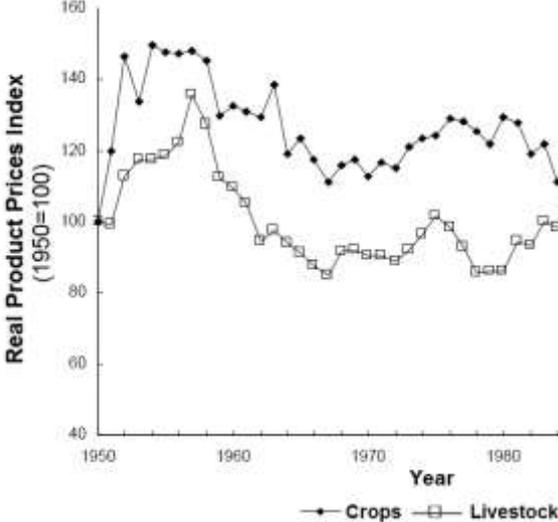
**Figure 13 – CPI Adjusted Export Product Prices for Farmers**



(Source: Kislev and Vaksin (2003), p. 15)

- Subsidy cancellations** - Another factor was the rise in income levels in Israel, resulting from the removal of the exchange rate restriction. In order to maintain the same level of consumption demand, the government canceled some of the subsidies previously given for basic products, essentially removing price supervision as well. This caused a 60%-120% increase in prices for consumers for basic products and a reduction in demand (Navon 2010). Consequently, the real prices farmers received for products significantly decreased (Figure 14).

**Figure 14 - Real Product Prices for Farmers**



(Source Source: Kislev and Vaksin (2003), p. 11)

- Increase in interest rate and return to fixed exchange rates** - In 1985, in order to reduce the astronomical inflation rate, the government chose to increase real interest rates to 170%, thus tremendously increasing the cost of production. At the same time, the government also froze the exchange rate, which meant that entities producing products for export or those producing products meant to compete with

import – both of which are relevant to agricultural cooperatives- were again the ones suffering the brunt of government policy.

- **Limits on bank lending** - A capital market reform, implemented in 1987, limited the volume of credit the banks were allowed to issue, meaning that banks had limited credit capabilities and refused to increase credit to the cooperatives, creating a credit crunch. Further exacerbating the credit crunch was the fact that cooperatives, unlike private companies, were not allowed, under reform guidelines, to issue securities in order to raise capital. The cooperative movements were able to do so, however, the high interest rates made it a non-viable option (Navon 2010).

*The role of the banking system:*

- **Artificial increase in value of bank stocks** - From 1977 until 1983 the Israeli banking system violated regulations and took part in actions which were meant to artificially increase value: The banks bought their own stocks, investment bankers working for the banks advised clients to purchase bank stocks, banks approved loans to individuals conditioning them on the purchase of bank stocks and more. These practices drove many, including the agricultural cooperative movements, to invest heavily in bank stock. The new government, due to its minimal involvement policy, did little in regard to the banks stock regulation practices during this period. In 1983 the entire Israeli stock market, including bank stocks, collapsed (Kislev, Lerman and Zusman 1989). The agricultural cooperatives were directly affected by this due to the loss of value in their bank stocks and holdings (agricultural cooperatives held 10% of the bank stocks). The collapse also affected the agricultural cooperatives indirectly, since the financial trouble the banking system found itself in, as well as the new restrictions imposed on the banks, required them to decrease credit, increase prices for banking services and change loan terms to increase profit. This meant that agricultural cooperatives had trouble receiving financial backing for development purposes from the banks, and the loans they did receive were under worse conditions than before.
- **Lack of due diligence** - The banking system further contributed to agricultural cooperative debt growth by lack of due diligence regarding loans granted to the various agricultural cooperative entities during the late 1970's and up until the mid 1980's. The banks believed that the government would intervene in times of major financial crisis, as it had done in the past. This created a soft-budget situation for the Kibbutzim and Moshavim. This convenient financing enabled the continued existence of inefficient and less profitable units. Unfortunately, the belief that the government would assist was not realized in time and the debt continued to grow.

*The role of the agricultural cooperatives:*

- **Moral hazard behavior** - As mentioned, agricultural cooperatives enjoyed favorable loan conditions for years, thanks to the mutual guarantee system. However, this system- which allowed Kibbutzim and Moshavim members to take out loans without proper backing or proof of necessity, with the knowledge that if they accrue a debt they could not repay, the other members of their Kibbutz or Moshav movement would repay if for them- was a fertile ground for moral hazard behavior. Agricultural cooperatives willingly went into debt to finance

investment in production, and more so in consumption assets (housing, vacations, etc.), even if repayment was far from assured (Kislev 2000).

- **Inefficient decision making within the Kibbutzim** – Specifically, investments in developing industrial plants were another important factor which contributed to their large debt. By the end of the 1970's, thanks to technological advancements (the transition to using a cotton picker instead of manual cotton harvesting; for example), agricultural production cooperatives had become extremely efficient. They found themselves with too many working hands. Changes in the business environment (to name but a few – the international oil crisis in the early 80's and the cheap, sweeter, oranges from Mexico which flooded the international market in the early 80's, significantly damaging international orange sales - Israel's third largest agricultural export product at the time) also left many out of work. Since Kibbutz members were not only workers but also owners, they could not be fired. A solution was required, and many Kibbutzim chose to develop industrial activities within the Kibbutz. This solution seemed reasonable at the time because, thanks to the mutual guarantee system, cooperatives had a soft budget which enabled them to take out loans and use that money in order to delve into new territories. However, managing an industrial plant requires a different skill-set than managing a farm, something that was not addressed by the Kibbutzim. Instead – as with all production and service branches in the Kibbutz - a member of the Kibbutz was appointed manager of the industrial plant. Between 1975 and 1985, 30-40 new industrial plants were built every year in the Kibbutzim, most without preliminary market research. These industrial plants had no equity (they were financed completely through loans given by the banks to the Kibbutz movements which then forwarded the money to the Kibbutzim) and most closed down within a few short years, further increasing the Kibbutz debt.
- **Inefficient decision making by second order cooperatives** - Regional enterprises made large investments in developing slaughterhouses, tertiary processing plants and machinery, without verifying market necessity, but rather simply because they could easily obtain bank loans.
- **Lack of control, insufficient monitoring and mismanagement** - Since their inception, most agricultural cooperatives did not produce accurate, inflation-adjusted financial reports, and the reports which were produced, were, in many cases, outdated and irrelevant by the time they were published. Not only that, but in the case of the Kibbutz-owned regional enterprises, financial reports were completely insignificant since, in order to avoid taxes, the regional enterprises either would give their Kibbutzim a retroactive discount equal to the amount of the profit they had made or would take advantage of the tax structure and roll the profit to their owners – the Kibbutzim, who then paid taxes on this additional profit. In both cases, the regional enterprises' financial reports always exhibited zero profits, making them insignificant tools in assessing performance. In short - it was impossible to ascertain the financial situation of the different cooperatives at any given point in time (Oz 2010).

Another example of the cooperatives' insufficient monitoring and mismanagement was the fact that the second order agricultural cooperatives and associations transferred credit to members without regard to their ability to repay the loans

(Kislev 2000). Moreover, the credit terms given by the second order cooperatives to their members would sometimes be for longer periods of time than the time frame they themselves received for their loans, and the loan terms did not always include financing costs. Therefore, for these loans, the second order cooperatives accrued debt they had no way of repaying. Nor did the second order cooperatives always distribute their debt among members in order to repay it in time. Consequently, these debts continued to accumulate interest and grow, while members paid higher income taxes than they would have were they able to reduce their portion of the secondary cooperative's debt from their earnings (Schwartz 1995).

### ***Cooperative ethics: the story of the Religious Kibbutz***

The Kibbutz HaDati (which means: "religious Kibbutz") movement, which was the third largest national Kibbutz movement at the time, binding its 16 Orthodox Zionist Kibbutzim under values of Torah and Avoda (religious values and their practical implications in work), managed to avoid the pitfalls which led most of the other agricultural cooperatives into deep financial crisis. Why was that?

On the surface, there weren't any structural, social, political or economic differences that gave the religious Kibbutzim the necessary tools to weather the financial storm. There were, however, other significant differences that should be stated:

*Saving, not spending:* While the other Kibbutzim, Moshavim, their movements and second order enterprises chose to invest significant funds in stocks, real estate, further production development and better living conditions for members, the religious Kibbutzim and their national movement chose to save for a rainy day. Their leaders felt that the change in government in 1977 and the governmental policies that followed made for unstable conditions for agricultural cooperatives, conditions which required action to protect themselves and their activities. The religious Kibbutzim significantly reduced investments and invested liquid assets in no-risk provident funds and insurance. Thanks to the choice of this route, once the banks tightened the credit leash at the beginning of the 1980's, the religious Kibbutz were able to continue production, debt free, while the other cooperatives took part in speculative activity in order to finance their growing needs and debt.

*Ideological commitment:* By 1977, the belief in the basic ideological ideals on which agricultural cooperatives were based had diminished significantly. The founding members had passed away or had reached old age and following generations did not have the same zealous attachment to the original ideology. Free riding and moral hazard behavior became more prevalent, resulting in a deteriorated work ethic and more interest in improving living conditions than in cooperative production (Kislev 2000). The religious Kibbutzim, being both a religious and a socialist entity, had more tools with which to unify members, maintaining the original values to a greater degree (Gadish 2012).

## **The crisis**

By 1985 the agricultural cooperatives' debts were growing with monthly compound interest and no means of repayment. This was true for most first, second and third order agricultural cooperatives. By the end of 1988 the debt accrued by the Kibbutz movements, the Kibbutzim and the Kibbutzim-owned second order cooperatives was valued at 7.78 billion dollars (CPI adjusted 2012 prices). The Moshavim cooperative entities accrued a relatively smaller debt of 3.04 billion dollars (CPI adjusted 2012 prices). The banks could not withstand absorbing the debt themselves as the debt was 5.5 times higher than their equity, so government intervention was essential in order to save both the agricultural cooperatives and the banking system (mainly the two largest banks in the country) from collapsing. However, the magnitude of the debt was far greater than the state budget, and so, the government had to come up with more creative ways to refinance the debt (Kislev 2000). It is important to note that over two thirds of the Kibbutz debt and roughly the same proportion of the Moshav debt was not directly to the banks but rather to cooperative financial mediators (financial funds and purchase cooperatives).

## Implementing solutions

Initially, two major settlements were reached, one for the Moshavim and one for the Kibbutzim. Later, it became clear that the Kibbutz settlement was insufficient to resolve the situation, and a second Kibbutz settlement was implemented, this time successfully healing the sector over time. A discussion of the three settlements follows.

*The Moshav settlement:* After much back and forth, in 1992 a law, known as the "Gal law", was enacted to deal with the Moshav debt repayment plan. The main components of the law were calculating the debt repayment capacity for every Moshav member (personal debt and a fraction of both the Moshav and the regional enterprises' debts) and forgiving the rest. The mutual guarantee system was completely eliminated. If a particular Moshav member was found unable to repay any of his debt, it was all forgiven. In this manner no Moshav would have to be dismantled. About 75% of the 3.04 billion dollar Moshav debt (CPI adjusted 2012 prices) was forgiven (Rozolio 1999), the repayment process is still on-going.

As part of the settlement, second order Moshav cooperatives ceased operation and their assets were sold to private parties (Kislev 2000).

*The first Kibbutz settlement:* As noted, the Kibbutz sectors debt was almost three times higher than that of the Moshav sector, making it crucial for Kibbutzim to agree to the terms of the settlement, and to be motivated, rather than forced, to implement them. Thus the Kibbutz settlement, signed in 1989, was not defined by law, but rather was an agreement reached by mutual understanding among all parties and signed by the Kibbutz movements, the banks and the treasury department. 248 Kibbutzim were part of the settlement, which applied to a debt size of 6.88 billion dollars (CPI adjusted 2012 prices), with the rest forgiven by the banks. Similar to the Moshav settlement, a main component of the Kibbutz settlement was calculating debt repayment capacity for each Kibbutz. However, the sum to be forgiven was predetermined and proved not high enough to encompass the entire debt which could not be repaid by the Kibbutzim. Moreover, unlike the Moshav settlement, the mutual guarantee system was still applied, allocating repayment of a fraction of the debt even to those Kibbutzim which had not accumulated debt.

The settlement also included the dismantling of the Kibbutz movements' financial funds and purchase cooperatives. Deposits made by Kibbutzim to the financial fund, which were then used to fund loans to other Kibbutzim, were reimbursed by the banks and the government following its dismantling.

Within a few short years it was clear that this settlement would not be able to resolve the Kibbutz debt crisis, eliminating only 25% of the Kibbutz debt. Two main reasons for this were:

1. Not all the debt that was meant to be forgiven as part of the settlement was in fact written-off, and the remaining sums continued to accumulate interest (Navon 2010).
2. The debt repayment capacity calculated for each Kibbutz was ineffective in part due to the fact that it assumed a fixed production level for each Kibbutz, based on average production levels of years past. In reality, in some years a Kibbutz was able to earn more, in other years it earned less – making it impossible to repay its designated debt for that year.

Another problematic aspect was that the debt repayment capacity calculation left the Kibbutzim with no equity, as all earnings not used to cover costs or living expenses were meant to be used to repay the debt. Leaving the Kibbutzim with no equity meant that they were unable to accumulate funding for investment in growth mechanisms or for the development of financial independence.

Furthermore, when constructing the repayment capacity calculations, it was assumed that the pension plan for the elderly would remain a budgetary pension - that the working members today would finance the pensions of the elders today. This assumption was false: In reality, during the years of the crisis and its financial aftermath, many active members left the Kibbutzim, meaning that there were fewer working hands left to pay for current and future pension needs. Accumulating equity could have provided a safety net for the elderly, but, as noted, the settlement left no option for accruing equity. The coupling of these two factors meant that under the first Kibbutz settlement, many elderly members would have soon been left with nothing.

In summary, the terms of the first Kibbutz settlement were not applicable and could not successfully solve the Kibbutz debt crisis. However, the terms were able to strengthen the banking system by reducing the debt they were required to forgive and by increasing their capital thanks to the funds they received during this period from the Kibbutz cooperatives – which seems to be the main reason it was applied (Navon 2010).

*The second Kibbutz settlement:* The failure of the first Kibbutz settlement required a second one to be implemented. The second Kibbutz settlement was signed in 1996 and included arrangements for 214 Kibbutzim. As part of this settlement, the mutual guarantee system was dismantled and the repayment capacity for each Kibbutz was recalculated. Debt which the Kibbutzim were not able to repay, known as the "balloon", was meant to be forgiven by the banks, with the government forwarding 35% of the forgiven debt in order to assist the process.

Another important aspect of the second Kibbutz settlement related to selling off of assets from the Kibbutzim by the government and the banks:

- In the late 1980's and early 1990's, after the fall of the Iron Curtain, Israel experienced a large increase in immigration. In order to accommodate the newcomers, land was required. As part of the second Kibbutz settlement, 19,10 ha in 46 Kibbutzim, sites found to be economically valuable and suitable for a change in designation from agriculture to residence, were designated for transfer back to the state in exchange for those Kibbutzim's portion of the "balloon" debt (State Comptroller of Israel report 2005).
- The Kibbutz movements signed over 25% of their holdings in Tnuva, the largest second order cooperative in Israel, to the government and the banks (State Comptroller of Israel report 2005).

Following the Tnuva deal, many Kibbutzim signed over their rights in regional enterprises in order to repay their debt and in order to increase equity. Equity accumulated was then used to establish pension funds, to which these Kibbutzim began transferring funds regularly.

Most of the Kibbutz-owned second order cooperatives continued their activities, unlike the case of the Moshavim and today they amount to 8 regional enterprises and supply cooperatives. However, they were restructured, becoming specialized and more efficient and ceasing operation as financial intermediaries for the Kibbutzim. All debt accrued by them was either deducted from their accumulated equity, rolled on to the members or forgiven by the banks, in accordance with a special settlement designed for them.

Table 1, below, specifies the portions forgiven by the banks and the amount of money the government forwarded to the banks under each settlement in order to assist in closing the debt. As mentioned above, the Kibbutz debt amounted to 7.78 billion dollars (not including the regional enterprises debt), according to table 1, roughly 60% of that debt was either forgiven by the banks or repaid by the government<sup>3</sup>, and the rest was repaid by the Kibbutzim over a period of 20 years, through the first and second Kibbutz settlements.

**Table 1 - Amounts of Debt Forgiven by the Government and the Banks through the First and Second Kibbutz Settlements in Millions of Dollars (CPI adjusted 2012 prices)**

	<b>Banks</b>	<b>%</b>	<b>Government</b>	<b>%</b>	<b>Total</b>
<b>First Kibbutz Settlement</b>	982.4	49%	1,031.6	51%	2,014
<b>Second Kibbutz Settlement</b>	1,739.6	66%	904.22	34%	2,643.82
<b>Regional Enterprises Settlement</b>	902.66	79%	241.4	21%	1,144.06
<b>Total</b>	3,624.66	62%	2,177.22	38%	5,801.88

(Source: Oz (2007), p. 18)

One reason why Kibbutz-owned second order cooperatives were able to stay afloat, while the Moshav-owned second order cooperatives ceased operation completely, relates to the difference in control and management structures between Kibbutzim and Moshavim. In Moshavim, there were too many management levels between the Moshav members and the second order cooperatives they owned, making it difficult to efficiently manage operations. In Kibbutzim, because all members were involved in every aspect of Kibbutz operations, including managing the second order cooperatives, operations were much more efficiently controlled and therefore more easily restructured. Moreover, in each Kibbutz-owned second order cooperative, there were 15-50 shareholders - the Kibbutzim. In the Moshav-owned second order cooperatives the shareholders were each individual Moshav household in every one of the 15-40 Moshavim which owned the second order cooperative (at least 1500 individual households). This number of stakeholders, each fighting for his personal farm's interests, made managerial decision making difficult.

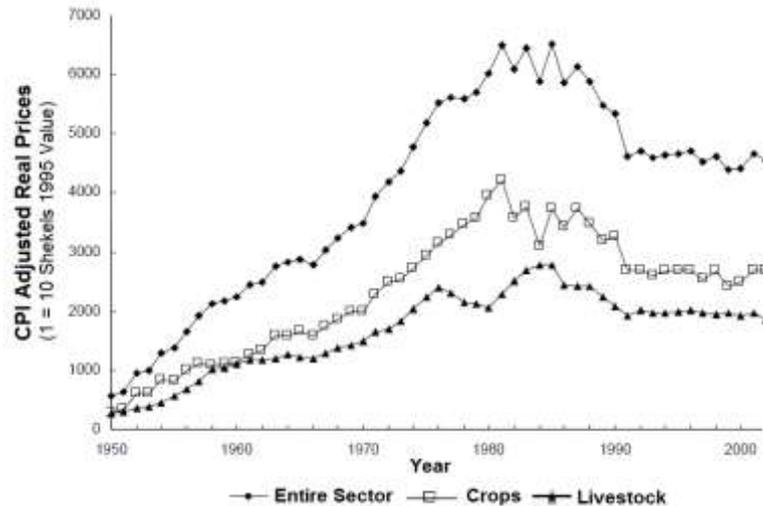
<sup>3</sup> Numerical values in table 1 and throughout the paper should be considered as approximations since they were collected from different time periods and have been CPI adjusted to 2012 prices, causing slight inconsistencies.

## ***Restructuring: adapting to a competitive environment***

The agricultural sector in Israel has changed significantly following the crisis, losing its prominence as a leading sector in the Israeli economy.

The share of agricultural produce in the GDP fell from 4.8% in 1980 to 1.7% in 2008 (Applebaum and Sofer 2010). Another example of these changes is the fact that, as exhibited in figure 15, by the year 2000 agricultural produce had lost a fourth of its value from 1980.

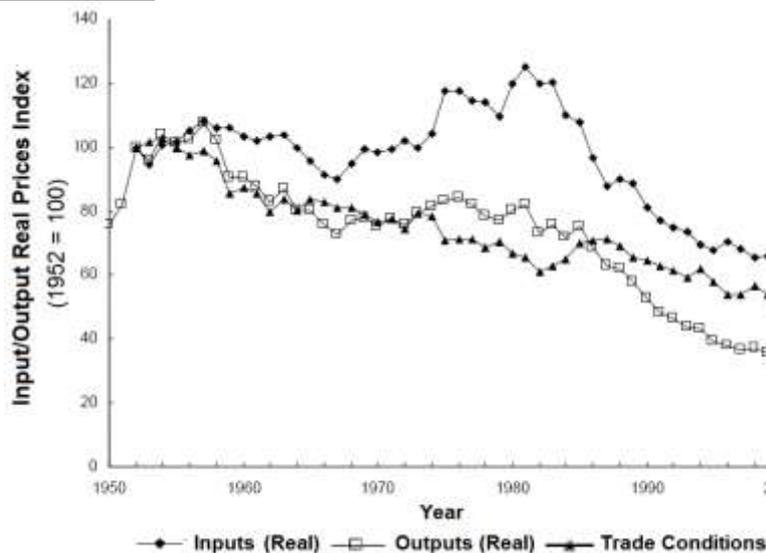
**Figure 15 - Value of Agricultural Produce**



(Source: Kislev and Vaksin (2003), p. 13)

Terms of trade (the ratio between input and output prices) have also worsened significantly since the beginning of the 1980's , falling from an Index value of 120 in 1980 to a value slightly under 70 by 2000 (Figure 16) and an index value of 60 by 2008 (Applebaum and Sofer 2010).

**Figure 16 - Terms of Trade**



(Source: Kislev and Vaksin (2003), p. 18)

Table 2 (below) specifies the current value of the various agricultural products produced in Israel.

**Table 2 –Agricultural Output Value By Purpose and Industry (2011 prices)**

	<b>For export</b>	<b>For domestic industry</b>	<b>For domestic consumption</b>
<b>GRAND TOTAL</b>	6,660.8	10,022.4	10,868.1
<b>CROPS – TOTAL</b>	6,490.0	1,012.3	9,308.4
<b>Field crops</b>	720.0	209.4	310.7
<b>Vegetables, potatoes and melons</b>	2,159.6	354.3	3,557.9
<b>Citrus</b>	628.5	66.6	609.1
<b>Plantations, excl. citrus</b>	846.4	370.9	4,417.8
<b>Flowers and garden plants</b>	548.6	-	409.1
<b>Miscellaneous crops</b>	586.8	11.1	3.8
<b>ANIMALS AND ANIMAL PRODUCTS – TOTAL</b>	80.8	9,010.1	1,347.8
<b>Poultry</b>	0.5	3,309.3	808.8
<b>Cattle</b>	-	4,519.6	27.7
<b>Sheep and goats</b>	-	959.8	85.6
<b>Fish</b>	59.6	-	372.7
<b>Miscellaneous</b>	0.6	221.3	52.9

(Source: Central Bureau of Statistics (2011), p. 37)

Furthermore, as can be seen in figure 9 (Shown earlier), income from agricultural production has also steadily declined since 1980. Figure 17 (below) shows that while in 1980 income for self-employed farmers was twice the income for an industrial position, by 2002 the gap was almost completely eliminated, with income from agricultural work having many more fluctuations and instability.

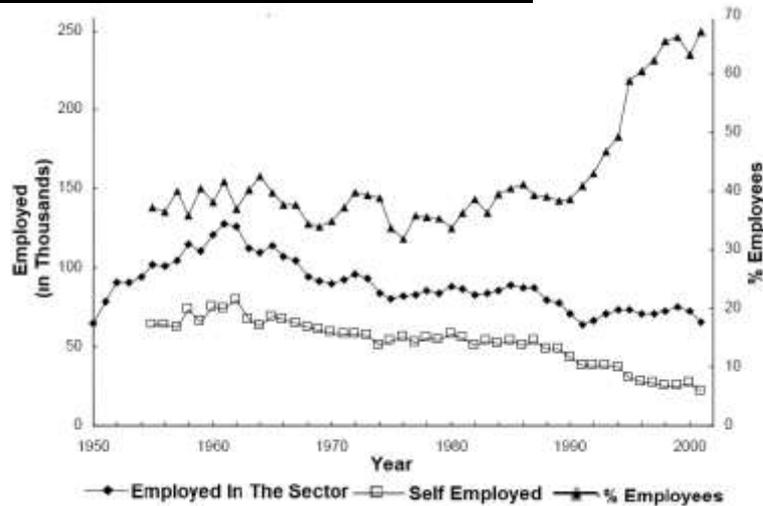
**Figure 17 - Income from Farming Vs Income from Industrial Work**



(Source: Kimhi (2003), p. 12)

Due to the above, the number of self-employed farmers has been steadily decreasing. However, the number of employees has increased significantly since the beginning of the 1990's, as shown in figure 18 (below).

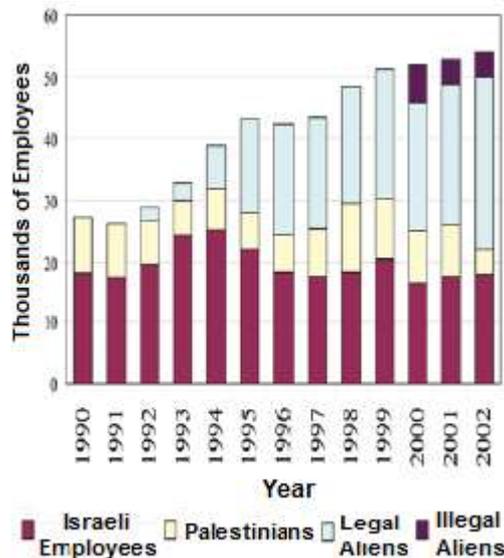
**Figure 18 - Self-Employed and Employees in Agriculture**



(Source: Kislev and Vaksin (2003), p. 20)

This trend points to a reduction in the number of farmers who own and work their own farms and an increase in the use of outside help, mostly foreign workers, in agriculture over the last few decades as can be seen in figure 19 (below).

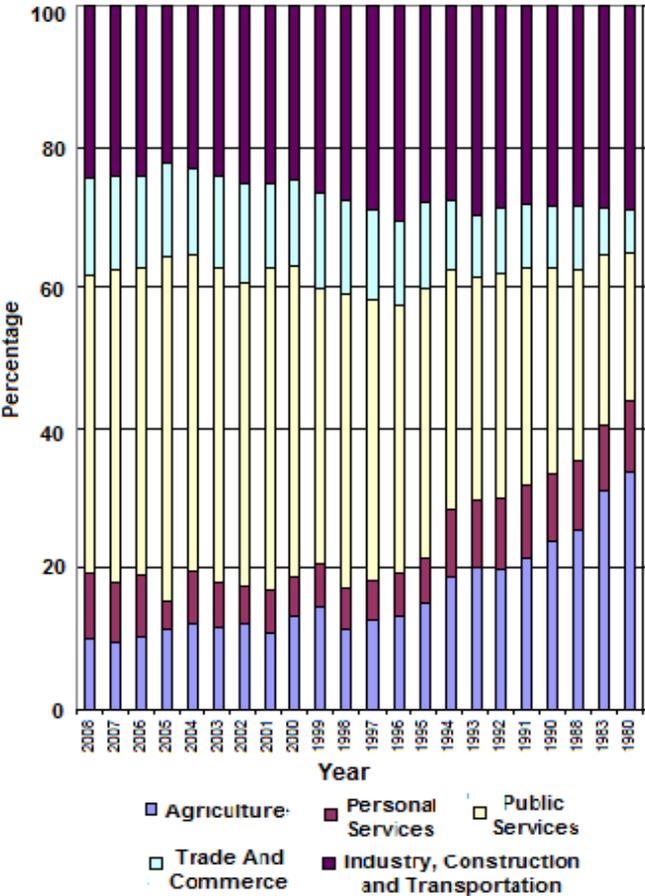
**Figure 19 - Segmentation of Those Employed in Agriculture**



(Source: Kimhi (2008), p. 12)

The reduction in income from agricultural work has changed the types of employment available in Moshavim and Kibbutzim, with many shifting towards more lucrative work in commerce, tourism and public services (Figure 20).

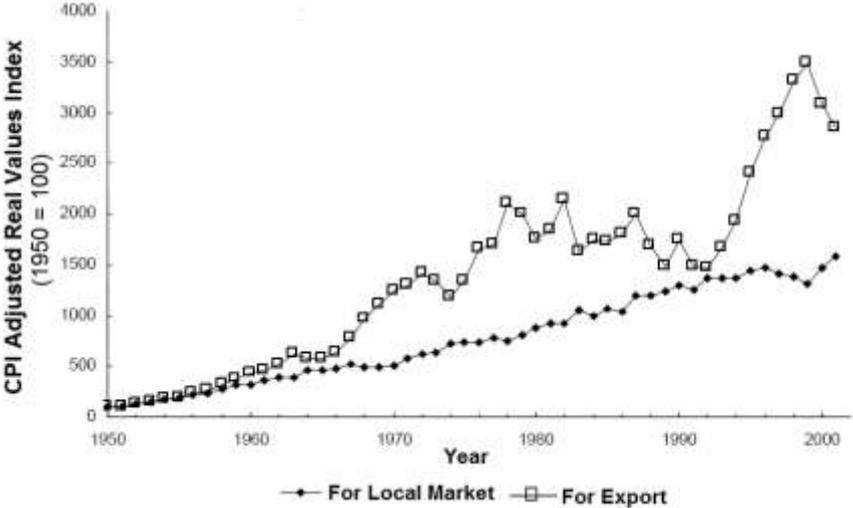
**Figure 20 - Types of Employment Opportunities in Moshavim and Kibbutzim**



(Source: Applebaum and Sofer (2010), p. 75)

While most changes in agricultural production have been negative, exhibiting a bleak picture of the current experience of agricultural cooperatives in Israel, they also point to a sector which has shifted from acting as a monopoly to a competitive mode, and with that come some positive aspects as well. These positive changes include a large increase in the export of agricultural produce during the 1990's (Figure 21).

**Figure 21 - Export of Agricultural Produce**

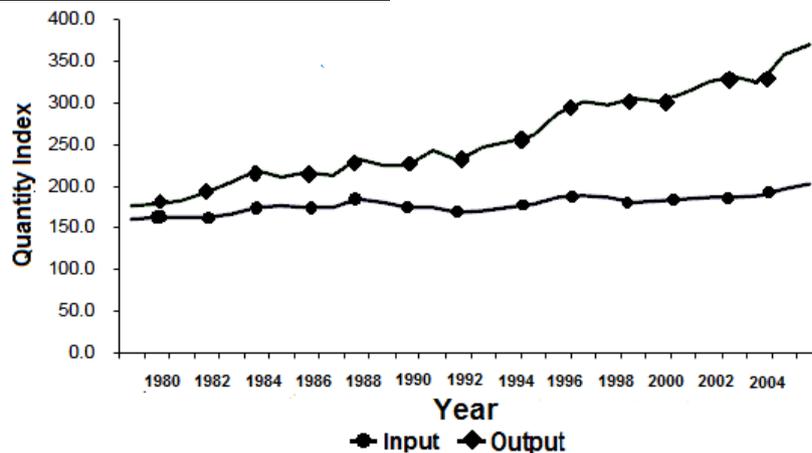


(Source: Kislev, Kislev and Vaksin (2003), p. 14)

In addition, as can be seen in figure 10, there has also been a steady increase in technological advancements in agriculture over the years. This became even more prominent after the crisis, most likely due to the need to optimize activities in order to remain competitive.

Presumably for the same reason, productivity has also enjoyed a larger increase since the beginning of the 1990's (Figure 22).

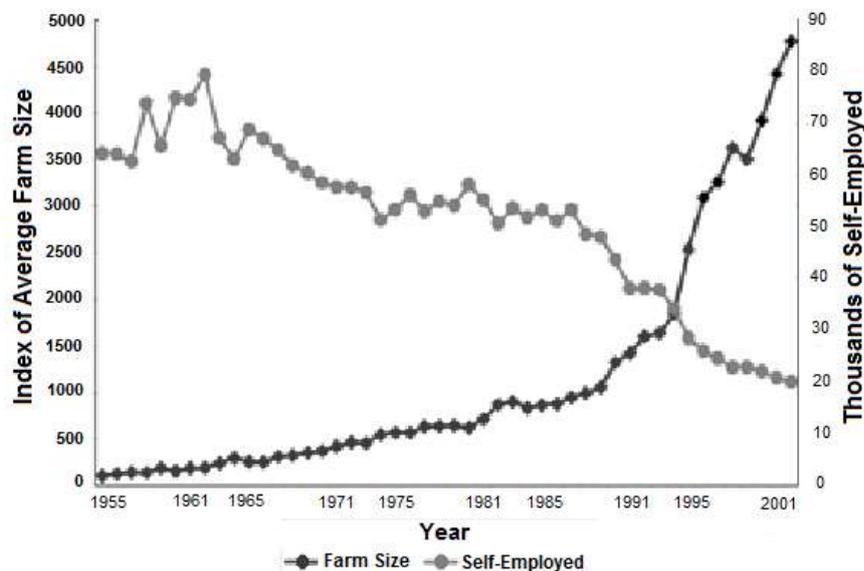
**Figure 22 - Input and Output in Agriculture**



(Source: Central Bureau of Statistics (2005), p. 16)

Another change has been in farm size: While the number of farmers has been decreasing, as noted above, farm size has grown significantly in order to maintain profitability (Figure 23).

**Figure 23 - Farm Size and Amount of Self-Employed in Agriculture**



(Source: Kimhi (2008), p. 10)

### ***The fall of agricultural cooperatives in the Moshavim***

Moshavim have always been family centered agricultural cooperatives, with each household working its own designated farm and enjoying the profits from the sale of its own produce. As the cooperative ideology began to disintegrate, with many losing faith in its effectiveness

following the debt crisis, Moshavim did not change very much in terms of structure – each household was and remained a separate unit, with cooperative operation limited to mere necessities (Kislev 2000).

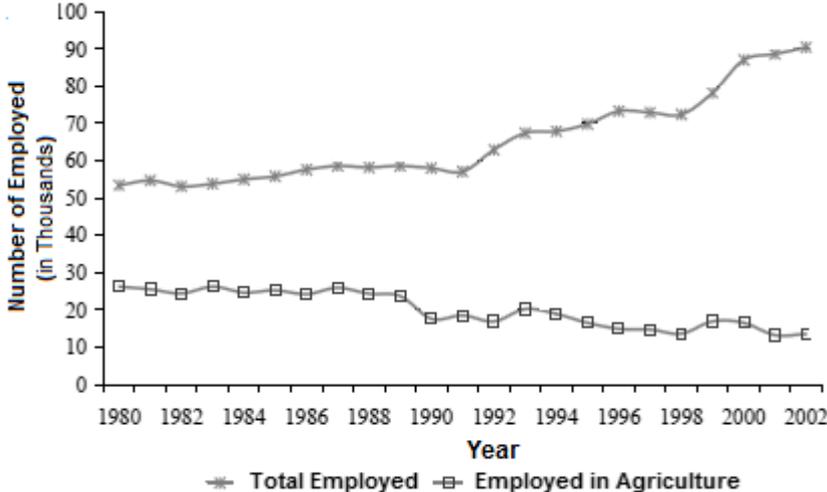
Specifically, in 430 of the roughly 442 Moshavim in existence today, the Moshav provides municipal services and limited business services to the independent farming units (households) which reside within its borders (the additional 12 Moshavim still employ the historical cooperative structure). It no longer offers financial services to members. Decision making concerning the production branches in the new Moshav structure are no longer communal, with each unit working autonomously.

In the past, the earnings from a single farm matched, and even surpassed, income from urban employment. As government policy shifted away from heavy support of agricultural activity, the economic environment became more competitive and agricultural activities became less profitable. The share of agricultural activities in employment decreased in Moshavim, making way for an economic strategy of multiple, integrated sources of income (Applebaum and Sofer 2010).

Moshavim have also endured significant social changes, which have had a negative impact on their cooperative nature. As part of government settlement policies, following large immigration waves from the former USSR at the end of the 1980's and the beginning of the 1990's, many purely residential neighbourhoods were built in Moshavim (some of the community-owned Moshav land, land used in the past for communal agricultural branches, was repurposed into residential sites). These new Moshav residents were not provided with land for farming, nor did they share the veteran Moshav member's cooperative ideology. This further reduced the affiliation of Moshav life to cooperative agricultural activity (Applebaum and Sofer 2010).

Currently, as exhibited in figure 24, Moshav agricultural production is concentrated in a small, steadily decreasing, number of specialized farms with most others focusing on non-agricultural activities (tourism, work outside the Moshav, and more) (Applebaum and Sofer 2010).

**Figure 24 – Amount of Those Employed in Agriculture from Total Employed in the Moshav (in thousands)**



(Source: Kimhi (2003), p. 14)

## ***Restructuring the Kibbutz***

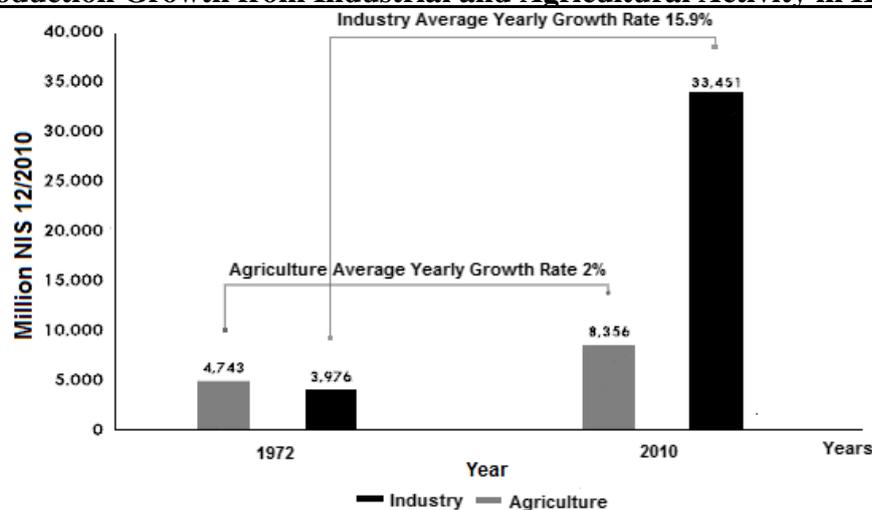
The cooperative nature of Kibbutzim has changed significantly over the last few decades, moving from a communal lifestyle, in which all members work and live together, to a more household oriented community. Issues such as deteriorating ideological commitment, free riding and the younger generation leaving the Kibbutz life for other opportunities have made it difficult for most Kibbutzim to maintain the cooperative lifestyle (Kislev 2000).

Nowadays, Kibbutz members in most of the 286 Kibbutzim in existence today, earn living individually by working in the Kibbutz agricultural branches, working in Kibbutz enterprises, relying on tourism or working outside the Kibbutz framework.

The agricultural branches in the Kibbutzim have been divided into separate cooperative associations which operate independently and competitively, usually employing outside managers who are better equipped to successfully lead a competitive entity.

The industrial plants in Kibbutzim have grown significantly over the last few decades, much more so than the agricultural branches (Figure 25), and have, for the most part, been privatized. In the majority of the cases the Kibbutz entity (the first order cooperative) now has only a small share in the industrial plants while the Kibbutz members themselves are direct owners (their ownership no longer mediated by the first order cooperative) with the remaining shares divided between them.

**Figure 25 - Production Growth from Industrial and Agricultural Activity in Kibbutzim**

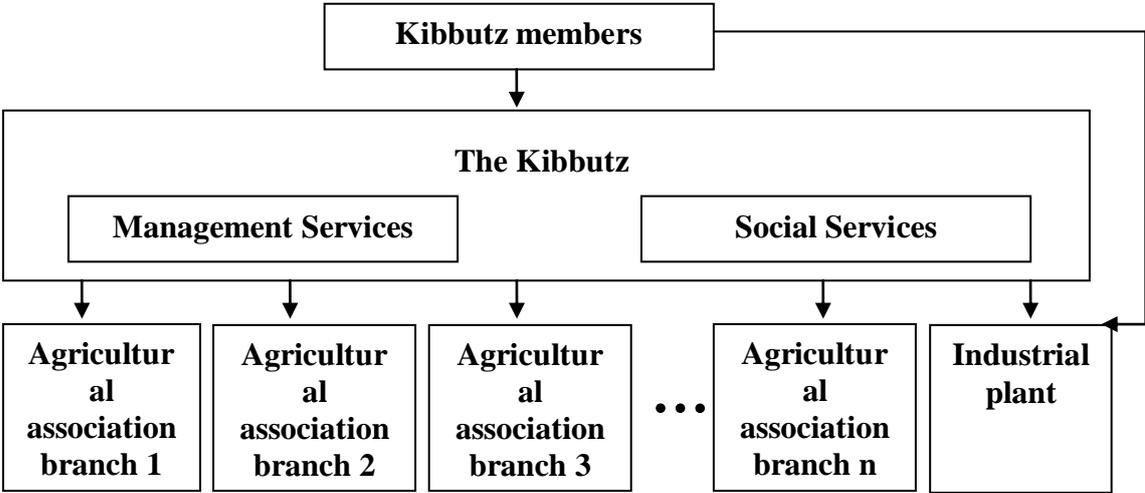


(Source: Kibbutz Industries Association – Yearly Review (2010), p. 10)

Wages in Kibbutzim are now differential (Kislev 2000). A remnant of the past structure is a financial "safety net", to which all members allocate a fraction of their wages. The "net" both secures minimal income to those who don't reach an agreed upon income threshold and finances some communal services, including limited management and financial services and some consumer services. Basically, this new type of Kibbutz relies mainly on private work but also integrates certain levels of cooperation among members. It is called the "differential model", to which, in 2009, 72% of the Kibbutzim belonged (Figure 26). The other 28% either belong to the old cooperative model or a combined model which integrates collaborative lifestyles with personal gain (Palgi and Weber 2010). The Kibbutzim maintaining a mostly

collaborative model are the more financially stable ones, while most Kibbutzim had to restructure and accept the differential model (Kimhi 2003).

**Figure 26 – New Kibbutz Control Structure**



In essence, individualization has taken over the agricultural cooperatives. Another example of this is the acceptance of many new Kibbutz members with a new status: financially independent members, who do not take part in cooperative activities. Many Kibbutzim also accept new residents who neither assume the title of "Kibbutz members" nor work in agriculture (Applebaum and Sofer 2010).

In the past, financial decision making (on issues such as which enterprises to develop, where to invest, and more) had been a collective effort, since they affected all members equally. As part of the shift towards individual work and pay, these decisions are now made separately in each of the now independent agricultural associations (production branches) in the Kibbutz.

The cooperative aspect of the current Kibbutz life is confined mainly to social services; however, these too have changed. They are no longer distributed equally and for free among members, but rather paid for through taxes.

Another major change in Kibbutz life relates to retirement funds. As noted, in the past a budgetary pension was enacted; however, following the debt crisis, most Kibbutzim were not financially stable enough to ensure a budget for care of the elderly. The continual loss of young members opting for more lucrative work outside the Kibbutz has created an actuarial debt with no resolution in sight. Some Kibbutzim sold their shares in regional enterprises to private entities in order to create retirement funds and have been allocating money to these funds since the early 90's, but this might not be enough (Kislev 2000).

In 2008, as part of an effort to increase pension funds, Tnuva, the largest marketing cooperative in Israel, was privatized, with most Kibbutzim and all Moshavim transferring the remainder of their holdings to Apax Partners (As previously mentioned, within the framework of the second Kibbutz settlement, 25% of Kibbutz holdings in Tnuva was transferred to the state and the banks). As part of the deal, the Kibbutzim and Moshavim were paid 1.4 billion dollars (which turned out to be significantly lower than Tnuva's actual value, as its real estate holdings were not taken into account when calculating its value at the time). Today Tnuva is

worth about 6 billion dollars. The money received from the deal was divided among the thousands of Kibbutz and Moshav members, after a difficult process of attributing accurate rights to the different parties within each Kibbutz and Moshav. This was a difficult process mainly due to the sheer size of Tnuva and the thousands of shareholders it had. The Kibbutzim that did not sell their shares still own 23.3% of Tnuva and are represented by their purchase cooperatives.

Taxation in Kibbutzim has also been a contributing factor to the reduction in the actuarial debt: Traditionally, in accordance with the Income Tax Ordinance specific to Kibbutzim, the Kibbutz would pay income taxes as if it were a collective of identical individual households in the following fashion: all Kibbutz earnings were subtracted from its expenses. This sum would then be equally divided among households in the Kibbutz, representing each household's share in the profit (to simplify calculations, every 2 Kibbutz members were considered a household). An equal, average, income tax was deducted from each household's earnings. All households' income taxes were then aggregated and that was the sum paid by the Kibbutz as income taxes on its earnings (it is worth noting that dividing profit between households was done only theoretically - in order to calculate taxes. As mentioned before – Kibbutz members did not actually receive a portion of the Kibbutz profits, but rather a small stipend, with all additional funds held and managed by the Kibbutz).

Even though after the crisis the Kibbutzim were restructured with each agricultural branch becoming a separate cooperative association and members now receiving differential pay, the aforementioned taxation system has remained the same. This was made possible through the IRS's cooperative society's ordinance (section 62), which states that a cooperative entity may choose between paying taxes as a cooperative association (corporate tax) or as a partnership (in which case the entity does not pay taxes but rather its owners pay income taxes on earnings). Because of this, the different agricultural branches in the Kibbutz, which are now separate cooperative associations, do not have to pay corporate taxes to the government, but rather can choose to be taxed as partnerships, and have their owner (the Kibbutz) pay income taxes on earnings.

Currently, the separate branches forward funds to the Kibbutz in the amount of the corporate taxes they would have paid for their profits. The individual households also forward funds to the Kibbutz in the amount of the differential income taxes they would have paid for the salaries. This constitutes the Kibbutz's earnings, which are then subtracted from its expenses in order to identify the Kibbutz's profit. And, as before, this profit is then theoretically divided between households, an equal, average, income tax is deducted from each household's theoretical portion of the profit, all equal income taxes are then aggregated and paid as the Kibbutz's income tax to the government.

The Kibbutzim utilize the monetary gap between the funds they receive from the agricultural branches and the members and the taxes they pay the government in order to reduce their actuarial debt as well as to finance various social services for members.

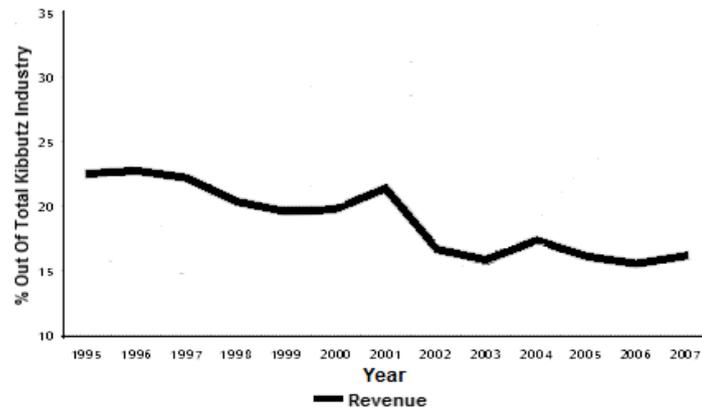
In the future, Israel's Income Tax Ordinance will most likely be updated to fit the new decentralized Kibbutz model, at which time the Kibbutz will not be able to pay income taxes as a collective of identical households (since they are in fact not identical in earnings any more). Until that occurs, the actuarial debt continues to decrease, and a strong safety net for the elderly is being established.

However, since in most countries cooperative entities enjoy lenient tax terms (the reason for that is that because, by definition, these entities are owned by those who use their services, if taxation of cooperatives becomes too high, they are motivated to lower prices for their cooperative services, thus overcoming inconvenient taxation conditions internally, thus making taxation ineffective), it would not be farfetched to assume that the same would be true for the Israeli agricultural cooperatives as well.

## The regional enterprises and the national movements

Following the financial crisis, Kibbutz regional enterprises have been experiencing a continual reduction in revenue similar to that of the entire agricultural sector (Figure 27).

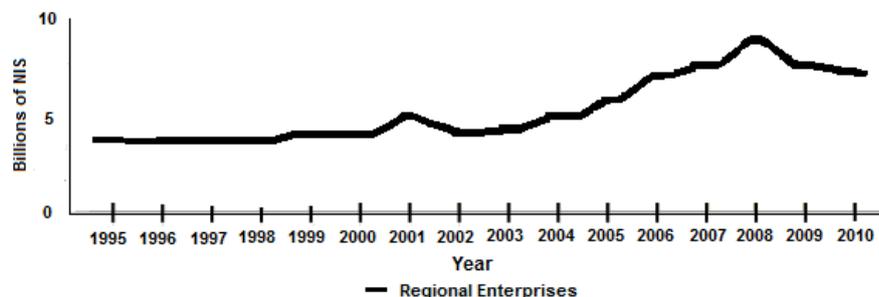
**Figure 27 –Revenue for Regional Enterprises**



(Source: Kibbutz Industries Association – Yearly Review. (2007), p. 23)

Thanks to an increase in specialized activities and the implementation of better monitoring systems, these regional enterprises have become more efficient and sales have been increasing for most of the last decade (Figure 28).

**Figure 28 –Sales of Regional Enterprises**

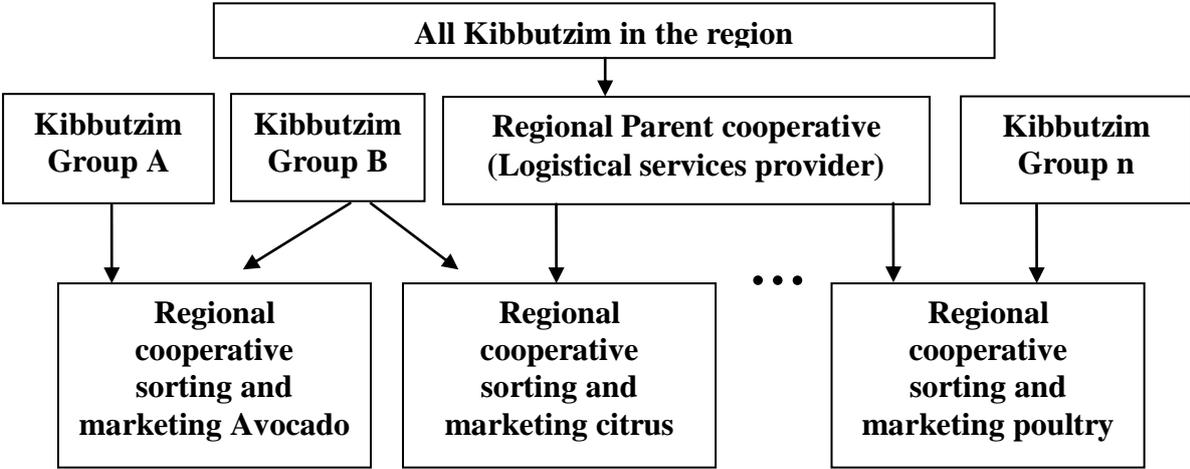


(Source: Kibbutz Industries Association – Yearly Review. (2010), p. 6)

Since the crisis, structural changes have also been implemented in regional enterprises, following the national trend of cooperatives in Israel (Figure 29): They have become more individualized and user-specific. Today the Kibbutzim, as owners of a regional enterprise, pay jointly for its utilities and receive a fraction of its profits based on their individual contributions (averaged over the last 10 years), rather than each paying equal sums of money and receiving equal payments regardless of contribution, as was the case in the past. Moreover, every regional enterprise under the parent regional cooperative became an individual cooperative association with its own specific owners from among the Kibbutzim in its region. While in the past all Kibbutzim in a certain region shared ownership of all regional enterprises, today owners of a regional enterprise are only the Kibbutzim whose growers and farmers actually use its services. Owners of one regional cooperative are not necessarily owners in another. The regional parent cooperative is still owned by all the Kibbutzim in the

region, providing mainly logistical services to the regional cooperatives under its control and receiving a share of their profits in the form of management fees.

**Figure 29 - Second Order Regional Cooperatives New Control Structure**

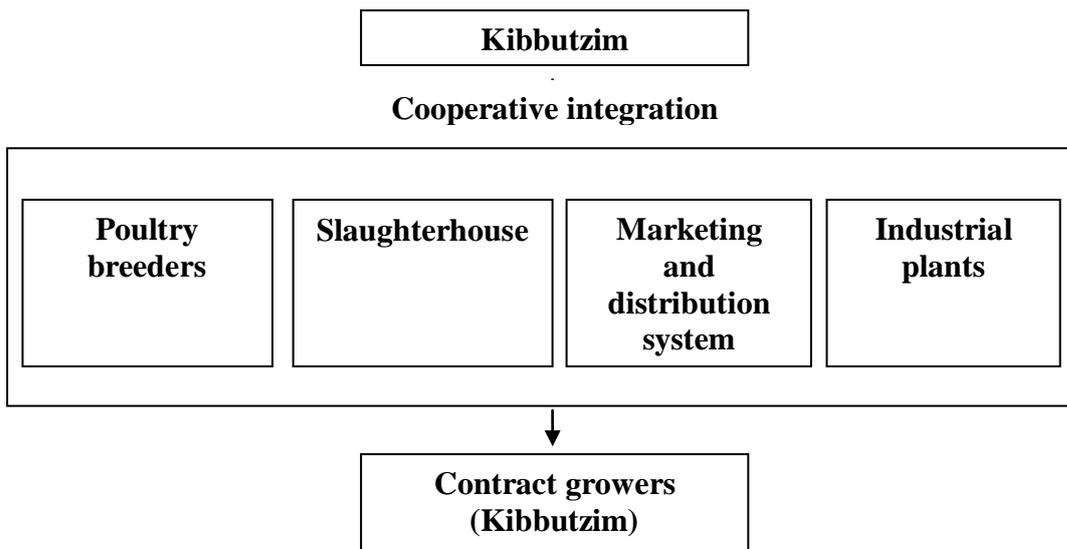


The dismantling of the mutual guarantee system, which provided a safety net for enterprises and members had they accrued any debt, forced regional enterprises to implement systems encouraging increased owner commitment to the enterprise. This was aimed at preventing situations in which a Kibbutz might cease operation with an enterprise, its portion of the cost then being distributed among the remaining Kibbutzim, thus incentivizing others to leave as well, endangering the enterprise's very existence. Regional enterprises today require a commitment from their owners to fixed costs (if an owner chooses to leave, that Kibbutz is still liable for its fraction of the fixed costs).

Additional structural changes following the crisis include horizontal integration of regional enterprises. Merging their operations allows them to take advantage of economies of scale in the current competitive environment.

Strategic changes were also made, substituting the push marketing strategy for pull. Push is generally a more suitable marketing strategy for cooperatives since second order cooperatives have little control over production quantity and have to provide sorting, packing and marketing services to whatever quantity they receive from members. On the other hand, in a competitive environment it is the market needs that should dictate quantity, and so regional enterprises have become more market oriented, dictating to the growers (the Kibbutzim) how much each will produce and when. Regional enterprises obtained significant power which enabled their influence on members' production decisions, through vertical integration: In some branches regional sorting and packing enterprises began marketing produce, and in others, such as poultry, some expanded not only to marketing but also to producing to supplement their function as slaughterhouses (Figure 30).

**Figure 30 – Integration Control Structure: The Poultry Sector**



The idea of vertical integration, which has been prevalent in western countries for many years, began picking up steam in Israel, especially in the poultry branch, at the beginning of the 21<sup>st</sup> century. In the past, Kibbutzim would forward produce on consignment to the slaughterhouse (a second order regional cooperative), which would then forward it to Tnuva (a second order national cooperative), which would market it. Kibbutzim would only receive payment after the produce was sold, and every entity in the production chain covered its costs through commissions on sales. Today, the Kibbutzim are contract growers: The cooperative integrated entity, which now includes the slaughterhouse, the marketing branch, input purchasing enterprises and more, owns the produce and pays the growers a salary. Therefore it can dictate the quantity expected from each Kibbutz according to market needs. Thus, even though the Kibbutzim are members and owners of the cooperative integration, in effect, they function as mere workers employed by it.

A contributing factor to the development of vertical integration in Israel was a change made to the antitrust law in 2002: the exclusion of marketing processed poultry from the agricultural exemption. This incentivized the regional enterprises (slaughterhouses), which now had to stop marketing through Tnuva, to provide marketing services themselves<sup>4</sup>.

Agrexco was Israel's largest agricultural produce exporter (owned by Tnuva, several regional enterprises and the government). In 2005 it collapsed, mainly because of its inability to adapt to a competitive agricultural market. Regional enterprises found themselves in a position to offer much needed marketing services to the Kibbutzim, compensating for the fallen company, and increasing integration in the agricultural sector in Israel.

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<sup>4</sup> The Israeli Antitrust law was first formulated in 1959, exempting all entities on the agricultural production chain – producers, wholesalers and retailers from laws against the creation of binding arrangements. This law was revised in 1962 and then in 1988, reducing the scope of the agricultural exemption to growers (farmers) and wholesalers and not retailers, in order to prevent the creation of retail cartels. Yet, retailers who are also wholesalers still enjoy the exemption and can create cartels through their holdings in wholesale companies (Kan 2010). In the European Union and the United States for example, the agricultural (cooperative) exemption to the antitrust law applies only to farmers and farming organizations, not to marketing entities that do not produce themselves. Moreover, in both the EU and US, and in contrast to the situation in Israel, the exemption has certain restrictions and can be overridden if it prevents competition (EU) or drastically raises prices (US) (Kahn and Finkelstein 2005).

Integration within regional enterprises was beneficial for Kibbutzim, serving as a way to reduce risk in a volatile, competitive market. But in the process, integration has marginalized them significantly, with power now in the integration entities' hands rather than in the Kibbutzim's.

The national Kibbutz and Moshav movements have also undergone changes, one being the 1999 merger of the two largest Kibbutz movements (the religious Kibbutz movement and its religious Kibbutzim opted out of the merger). This national movement, like the Moshav movement, currently has two main activities: lobbying for its members and supplying social services. The movements' main goals are to preserve and further develop the Moshavim and Kibbutzim. The movements no longer participate in financial activities. Every Kibbutz member now has to directly communicate with the banks.

While in the past the movements enjoyed great political strength, their power has been significantly reduced since the crisis, with regional councils taking over many of the movements' previous roles.

## **Concluding remarks**

Change in government policy in regard to agricultural cooperatives and the inability of agricultural cooperatives to transition from a monopolistic economic environment to a more competitive one were the underlying causes for the 1980's debt crisis. Agricultural cooperatives were slow to adapt to changes in policy; thanks to major restructuring and significant changes in economic strategy, they were able to regain stability, albeit at a great financial and social cost.

Nowadays, similar to many countries around the world, the government still supports certain agriculture related activities through subsidies and production quotas (milk and milk products for example) (Kedmon 2012), but for the most part agricultural cooperatives compete on a level playing field with private entities in the Israeli market and with importers from around the world.

Unlike most other countries, the Israeli agricultural sector has always been primarily cooperative. In early years, the vast majority of agricultural activities, production and services alike, were done cooperatively. This, coupled with the broad support given to the sector by the government contributed to the stability of the agricultural sector for many years, enabling the rapid development of a highly productive, technologically advanced agricultural sector in Israel. When the country transitioned and became more liberal, the agricultural cooperatives had to be restructured in order to fit a now competitive market. As a result, the agricultural sector has endured massive changes but continues to perform well in a more limited cooperative structure.

### **Lessons from the Israeli experience with agricultural cooperatives**

International development organizations have a key role in the transfer of knowledge regarding successful work processes, important policy components and effective cooperative structures. They can give guidance to developing countries and give insight to developed ones, reducing the knowledge gap within the international community in order to support and further develop agricultural work around the world. International development organizations offer an open channel of communication between countries, thus aiding in the preservation and growth of the agricultural sector.

The Israeli experience, while it is unique in many ways, presents a number of important lessons concerning agricultural cooperatives, lessons that might assist embryonic economies, as was Israel not many years ago, in establishing a stable, successful cooperative-based agricultural sector. It also illustrates important issues relevant to developed economies. Some of these lessons are listed below:

- Agricultural cooperatives can play an essential role in the development and maintenance of a profitable agricultural sector. They can allow countries, even those with minimal resources, to effectively leverage existing resources and utilize them in an optimal manner, benefitting both the farmers themselves and the country as a whole. Many agricultural activities rely on weather conditions, gas prices, water prices, international demand and competition. These unstable conditions are out of the individual farmer's control. However, agricultural cooperatives can minimize the risks inherent in agricultural work by strengthening

the farmer's position in the market and offering a secondary source of income from his share in the cooperative's profit. On the national level, efficient agricultural service cooperatives can supply citizens with relatively low-cost produce (by lowering production costs for farmers, which can be converted into lower prices for agricultural produce) and can establish and expand international relationships through centralized export and stable trade agreements.

- It is clear that government support – through investments in agricultural activities, tax reductions, subsidies and lenient credit terms - are imperative for developing and maintaining successful agricultural cooperatives. However, when operations are not adequately monitored, this can lead to crisis. Proper monitoring translates into efficient management and investment strategies by agricultural cooperatives, ensuring that government support is optimally utilized. The history of Israeli agricultural cooperatives provides examples of behavior contrary to these aims: Until the 1980's crisis, Israel's second order regional agricultural cooperatives lacked sufficient monitoring and management. They produced insignificant financial reports, making it impossible to distinguish efficient entities from inefficient ones. Nor was it possible to ascertain what changes should be made to the latter in order to rehabilitate them. Utilizing government support mechanisms to implement effective growth strategies should have been a top priority. Without oversight, the service cooperatives focused instead on growing in size, diversifying activities and transferring funds to their owners (the Kibbutzim and Moshavim), primarily for political and personal, non market-related reasons.
- A mutual guarantee system can increase financial leverage for cooperatives, and with reasonable limitations and proper monitoring, enables speedy, steady growth. In Israel, the mutual guarantee system enabled agricultural cooperatives to develop quickly and efficiently up until the late 70's, become technologically advanced and successful within a short period of time, and produce quality agricultural products to both the Israeli and the international markets, all without personal assets or equity. As was evident in the Israeli experience, lack of monitoring can also lead to moral hazard behavior. Agricultural cooperative entities, enticed by lenient loan terms, chose to invest in inefficient activities such as hundreds of industrial plants (without relevant knowledge and expertise in the field) and to invest lavishly in improving living conditions rather than production oriented activities.
- While an efficient mutual guarantee system enables initial development and growth, sustainable agricultural cooperatives need to accrue liquid equity as reserves. This enables them to maintain stability when markets are volatile, as evidenced by the case of the religious Kibbutzim production cooperatives during the 1980's crisis and by some of the Kibbutzim second order service cooperatives, which remained profitable and free of liabilities while their counterparts plunged into deep debts.
- Cooperatives are potential tools for rehabilitation in agricultural areas under economic stress. They can increase bargaining power through mergers and vertical integration, thus minimizing risk for farmers and strengthening the relationship between production and market needs.

- It can also be deduced from the Israeli experience that once a country grows out of its embryonic economic stage and/or becomes more liberal, the optimal structure is a decentralized one, based on individualized production with cooperation confined to services. These should include production related services (to provide input, machinery, output processing, packaging and marketing services for farmers), utilizing economies of scale in order to effectively withstand a competitive market environment.
- Finally, Government must present a clear long term policy in regard to agricultural development and support. As was evident during the crisis in Israel, once policy is short term, with frequent changes, agricultural cooperatives cannot devise stable growth plans and their decision making process is impaired. Government should also specifically state the terms in which it will intervene and assist in times of crisis, eliminating the misconception, which was prevalent in Israel before and during the 1980's financial crisis, that government will always bail out the agricultural cooperatives in times of need. It is important to note that Israel still does not have an official long term policy, leaving individual cooperative members facing an uncertain economic future.

## References

- Applebaum, Levia and Sofer, Michael. "Changes In Agriculture And In Rural Areas In Israel", *Report from Committee for Rural Settlement in 2025*. 2010. P. 72, 75. (Hebrew)
- Applebaum, Levia and Sofer, Michael. "The Moshav - Structural Changes And Future Trends", *Report from Committee for Rural Settlement in 2025*. 2010. P. 89. (Hebrew)
- Boimal, Yair. *Subjugation Of The Arab Economy To The Jewish Sector In Israel 1958-1967*. The Association for Middle Eastern and Islamic Studies. 2009. (Hebrew)
- Census of Agricultural Assets performed by the Ministry of Agriculture, 2000. (Hebrew)
- Central Bureau of Statistics, *Agricultural Sector Account*. 2005. P. 16. (Hebrew)
- Central Bureau of Statistics, *Agricultural Sector Account – Price Indices Input and Output*. 2010-2011. P. 37. (Hebrew)
- Central Bureau of Statistics, *The Kibbutzim and Their Population: Demographic Changes in the Years 1961-2005*. Jerusalem, 2008, P. 10. (Hebrew)
- Gadish, Yaacov. *Your Way: In Memory Of Yaacov Gadish*. Hakibutz HaMeuhad Press, 2012. P. 116. (Hebrew)
- Kahn, Yael and Finkelstein. *Antitrust Laws In The Agricultural Sector In Israel, In The United States And In The European Union*. 2005. P. 21. (Hebrew)
- Kan, Ronit. Protocol from 2010 Finance Committee Meeting. 2010. P. 6. (Hebrew)
- Kedmon, Mordechai Cohen. *Agricultural Land Policy In Israel: International, Agricultural and Land Settlement Aspects*. 2012. P. 7-8. (Hebrew)
- Kibbutz Industries Association – Yearly Review. 2007. P. 23. (Hebrew)
- Kibbutz Industries Association – Yearly Review. 2010. P. 6, 10 (Hebrew)
- Kimhi, Ayal, "Sixty Years Of Agriculture In Israel, Achievements, Struggles And A Look To The Future", *Nir vatelem monthly journal on subjects of field crops, machinery and agricultural engineering* Vol. 7, 2008. P. 10, 12. (Hebrew)
- Kimhi, Ayal. *Rural Development and Rural Policy In Developed Countries – Literature Review*. 2003. P. 12, 14, 15. (Hebrew)
- Kislev, Yoav. "Studies on The Development of Agriculture". *Technology, Cooperation, Growth and Policy, Studies in Agricultural Economics*, Jerusalem, Magnes Press, 1990. P. 57, 71. (Hebrew)
- Kislev, Yoav. *Recent Experience with Agricultural Cooperatives in Israel*. [http://departments.agri.huji.ac.il/economics/teachers/kislev\\_yoav/index.htm](http://departments.agri.huji.ac.il/economics/teachers/kislev_yoav/index.htm), 2000. P. 5-11.
- Kislev, Yoav, Lerman, Zvi and Zusman, Pinchas. *Credit Cooperatives in Israeli Agriculture*, Working Paper 156, Agricultural and Rural Development, The World Bank, 1989, P. 4, 9, 23, 31, 34,

- Kislev, Yoav, and Vaksin Evgenia. *Statistical Atlas of Israeli Agriculture, 2003 update*. The Center for Agricultural Economics Research, Rehovot, 2003. P. 9, 11, 13- 15, 18, 20, 21, 24. (Hebrew)
- Navon, Tom. *The Kibbutz Crisis and Economic Policy in Israel*. 2010. P. 11, 15, 34, 43, 47, 54. (Hebrew)
- Oz, Israel. *From Crisis to Growth*. Seminar of the Headquarters for the Execution of the Kibbutz Settlement. Shefayim, 2007. P. 18, 31, 112. (Hebrew)
- Palgi, Michal and Weber, Uri. "The Kibbutz - Structural Changes And Future Trends", *Report from Committee for Rural Settlement in 2025*. 2010. P. 81-82. (Hebrew)
- Prois, V. *The Cooperative Movement Around The World And In Israel*. Tel Aviv: Am Oved publishers. Tel Aviv, 1956, P. 207-208. (Hebrew)
- Rozolio, Daniel. *The Method And The Crisis – Crises, Settlements And Changes In The Kibbutz Movement*. Tel Aviv. Am Oved Publishers, 1999. P. 182. (Hebrew)
- Schwartz, Moshe. *Unlimited Guarantee*. Beer Sheva. Ben Gurion University of the Negev Press, 1995. P. 262-264. (Hebrew)
- State Comptroller Report 2005, chapter 2 – Government Offices, Implementation of the Kibbutz Settlement. 2005. P. 61-63. (Hebrew)

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