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[1] According to the former Hungarian classification scientific degrees are the following:

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- **candidate**, which is somewhat higher than a PhD, and
- **doctor of the Academy** of Sciences (DSc.).

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The impact of the WTO Agreement on the present, the future and the agenda of Hungarian agricultural policy

by Judit Gábor, Anikó Juhász, János Kartali, Gyöngyi Kürthy and Mária Nagy

1. The expected impacts of the reduced export subsidy from 2002

According to the WTO Agreement, Hungary may provide subsidy for only 16 products from 1 January 2002. Of these currently only four products (pigs for slaughter, pork, whole chickens and ground paprika) receive export subventions. After 2002 the unit subsidy on these products should be reduced by a half.

The analysis of price, cost and support indicates that from among those products receiving subsidy today, a part of **pork sector** exports will be most threatened after 2002. This especially applies to precisely pork cuts, canned and foil-wrapped ham and liver pate developed for the USA market. (Spiced sausage and salami types are profitable, while pork may continue to be subsidized after 2002.) According to a forecast of prices on the world market, it is not possible to reckon on an increase in meat prices, the proportion of subsidy on export prices is high (13-19 per cent), and the subsidized export of the abovementioned products shows a deficit.

From a subsidy point of view, the advantage of the **poultry sector** over the pork sector is that three-quarters of exports of the poultry sector are taken up within the EU, in which relation the supports have already been reciprocally abolished. Presumably, there is going to be a problem with the surplus of chicken drumsticks after 2002, since their subsidy in relation to their price is close on 10 per cent, and according to cost-income data they can still only be exported at a loss even with a subvention.

In the **processed vegetable-fruit sector** the proportion of the subsidy on the primary canned vegetables for export is still relatively high at 11-17 per cent, while that of canned fruits and quick-frozen horticultural products is lower, mainly around 10 per cent. However, there are some larger export items – raspberries, canned sweet corn, gherkins – which are profitable even without subsidy. Enterprises do not always take advantage of export subsidies. It would appear that the above products will not face any problem in accessing a market after 2002, if investment support on basic materials is maintained.
One can state that, after conducting a comparison of EU-Hungarian export levels post-2002, subvention competition will have a very disadvantageous outcome for us, because the unit subvention which may be given within the EU is a multiple of that for Hungary.

2. The Hungarian standpoint represented at WTO negotiations

The majority of member states of the WTO do not employ direct export subsidies. Less than 20 per cent of the 137 countries, 25 states in all, use the opportunity to apply this form of subvention. Thus it comes as no surprise to find that certain member states and the majority of groupings of countries vote for the abolition of export subsidies, for instance the USA, the Cairns Group and the developing countries.

At WTO negotiations it is in **Hungary's interest to support the EU and Cairns Group proposal regarding the export credit and insurance settlement**, because it has a powerful trade distortional effect and, in the US practice, functions as a hidden export subsidy.

It is similarly in the interests of Hungary to support the USA and Cairns Group proposal regarding state (monopoly) trade restrictions, since we do not conduct this activity and this form of trade also functions as a hidden subsidy.

On the question of export subsidies, it is in the interest of Hungary to join the group of states that aim to reduce export subventions.

3. Green box subsidies

From an examination of international and domestic green box subsidies it appears that the **Hungarian practice as regards legal title is only slightly different from that of international practice**. This is because Hungary also employs the forms of subsidy exemption that are to be found in other countries. Rather, the problem here is that the proportion of green box subsidies within total subsidies is low, in fact just 24 per cent, while this figure is between 70-90 per cent in many other countries that have been examined. This is a prime reason to promote an increase both in the sum and the proportion of this form of subsidy within the overall subsidy. It is necessary to ensure a broader subsidy framework for the development of a wide range of services, structural adjustment, infrastructure, environmental protection, for the development of certain backward regions and disaster relief.

A further aim is to introduce a **total expenses reimbursement system** in place of the current partial subsidy on animal hygiene and phytosanitary as well as on classification costs. (Veterinary, prevention, animal medicine costs, ATEV, phytosanitary tests, immunization against salmonella and Aujeszky's disease.)

We recommend the introduction of new legal titles for green box subsidies in the following areas:

- The expansion of the circle of those receiving a share of domestic foodstuff assistance. Prior to its introduction it would be necessary to determine the targeted sections (for instance, meals for schoolchildren or low income earners) and the form of assistance (food vouchers, organizations providing school meals etc.),
- The extension of aid for non-insurable agricultural damage to stock-farmers, to compensate for extraordinary damage suffered to fodder,
- Support for the formation of packaging, refrigeration and storage centres developing a logistics system,
- Assistance to obtain marketing, market access and market information,
- The formation of pilot and demonstration centres to develop family farm informative material, farm management courses,
- The extension of the necessary infrastructural background for product guarantees and certification of country of origin, and the realization of traceability,
- Subsidies for expenses incurred in labelling, goods- and origin marks,
- Support for the introduction of integrated quality control systems in the poultry, pork and horticultural sectors.

The introduction of new legal titles, the augmentation of individual budgets, and the replacement of partial expense reimbursement with a system of total expense take-up in the mentioned areas could ensure that the current subvention system built largely on price and cost subsidies shifts towards unrestricted green box subsidies.

4. Evaluation of the Domestic Subsidization Indicator

One of the most important elements of the Agricultural Agreement is the reduction of internal subsidies. In order to determine the level of subsidization the Agreement employs an aggregate indicator, the Aggregate Measurement of Support (AMS), or the Domestic Subsidization Indicator, which expresses in a single figure the product-specific and non-product-specific subsidies granted to agricultural producers in the given year.

However, the AMS does not correspond to total subsidy payments, in that the member countries have several reductive options open to them. One such opportunity is the full exemption of the charge-back commitment on certain subsidized legal titles. These fall into two groups: subsidies linked to production restriction programmes (blue box subsidies), and those which either do not distort trade or which distort trade to a limited degree only (green box subsidies). Hungarian subsidies are apparent in the latter category only.

The other important reductive option is the so-called "de-minimis" regulation, whereby subsidies otherwise for inclusion in AMS and falling under the reductive commitment (yellow box) are exempted from charge-back if their sum, in the case of product-specific subsidies of the given products, and in the case of non-product-specific subsidies of the total agricultural gross production value, is less than 5 per cent.

On the other hand, the calculation of the so-called Market Price Support (MPS) works in the opposite direction, namely it has an AMS-growth effect. The Market Price Support is the multiple of the difference between the fixed external reference price and the administrative (guaranteed) price applied in the given member country and the regulated price authorized quantity. In many cases this is a totally fictive sum never actually paid out (if in the given year there is no requirement to intervene in the market process through state purchases), but according to the logic of the Agreement the very act of announcing the guaranteed prices has in itself an impact on production because it holds out the possibility of a certain type of security guarantee, and for this reason – as a trade distortive tool – it has to be limited.

Thus, in short, the sum of the (paid) internal subsidies of a member country is equal to the sum of the green, blue and yellow box subsidies. At the same time, the AMS is the sum of the product-specific and non-product-specific supports (yellow box) less the items falling under the "de-minimis" regulation, and the Market Price Supports (MPS).

The basis of the AMS reductive commitment was the constituted base level for the years 1986-1988, amounting to a total HUF 42,260 million. Under the terms of the Agreement we have to reduce this sum by an annual 20% between 1995 to 2000, arriving at a final sum of HUF 33,808 million by the year 2000. Keeping to the Agreement is made all the more difficult by the fact that all the sums are defined in Hungarian Forints, and it has still not been decided as to what extent and by what means it is possible to take into account the inflation in the intervening period.

In the course of our work we carried out AMS calculations for 1999 and 2000, examining the question of how far we are able to meet our commitments. The results of our calculations are summarized below:

We carried out AMS calculations using three methods, because the calculation methodology for establishing market price subsidies as set down in the Agreement is open to several interpretations. According to the first interpretative method, to estimate the Market Price Supports we took into consideration the actual budgetary payments, secondly we calculated the difference between the reference price and the administrative price multiplied by the authorized quantity, although to establish the current rate of the reference price we carried out a correction based on the ECU/HUF exchange rate, and thirdly we conducted the same calculation but did not make an allowance for an exchange rate correction.

In both of the years we looked at the first method was most favourable; using this method of calculation we are able to meet our reductive commitments even despite the inflationary effect. (Following this method gives a result of HUF 16,297 million in 1999 and HUF 6,577 million in 2000.)

Using the second method, the AMS sum of HUF 20,870 million in 2000 still keeps us under the threshold, although the figure calculated for 1999 (HUF 50,622 million) is only acceptable, under the terms of the Agreement, where we valorize the accepted values, that is we somehow formulate it in current values.

The results of the third method of calculation give us the greatest AMS values for both years (HUF 149,425 million in 1999 and HUF 121,855 million in 2000). The Internal Subsidization Indicator calculated using this method is only appropriate for our accepted reductive commitments in the case where we valorize, but it is by no means immaterial as to exactly how this is done. As regards the AMS value for 1999, it is only possible to valorize using the inflation rate, the industrial price index and the USD/HUF exchange rate, while as regards the year 2000 there is no such limitation, although some form of valorisation is required.

5. The relationships between our commitments undertaken in the WTO Agricultural Agreement, and the agreement on the further liberalization of agricultural trade between the EU and Hungary

In the first half of 2000 the European Union signed new agreements with the countries of Central and Eastern Europe on the further liberalization of agricultural trade. In the agreement signed with Hungary four lists detail the concerned agricultural and food industry products. In the **"double zero" list** both sides mutually consent to the abolition of customs duties, without regard to quantity. The **products categorized in the "four zero" list** are those items on which both sides agree to a complete abolition of both customs duties and export subventions. The **"classical" list** applies those allowance types set down in the 1991 agreement on association, that is the customs allowance quotas. The customs allowances on the **items on the list of processed products** will be established through complicated calculations, since the customs on the industrial share was abolished earlier and the current reduction is only directed towards easing the customs on the agricultural share. According to calculations, the new agreement affects around 60 per cent of the agricultural exports of both parties.

In our study we also examined the relationships between the Hungarian-EU agricultural agreement and the commitments undertaken in the WTO vis-à-vis export subsidies and customs duties. The following are the most important findings:

As regards export subsidies, there is an apparent difference in the situations for the year 2001 and the year 2002, in the respect that the divergence between our commitments to the WTO and the EU will only continue to grow with the expiry of the WTO waiver. Nor do the WTO and EU agreements coincide in the case of one single product appearing on the waiver. That is neither agreement rules out the other. (The EU agreement provides greater allowances than those we undertook in the WTO, but since the WTO commitments were for the minimum both as regards subventions and customs duties, it is possible to undertake a proportionally greater reduction.) The WTO waiver allows support for export quantities directed to markets outside the EU on the EU quota products, which – taking into account the actual exports for 1999 – means that the applicability of the support opportunity provided by the waiver would be restrict the legal titles for subsidy at those products where the export to other markets does not reach the waiver-quantity less the EU quota. However, this restriction is virtually invalidated by the fact that the most important of the examined products are not subsidized any longer.

From all this it follows that the new agreement signed between Hungary and the European Union in 2000 can at most have only a minimal impact in restricting subsidy opportunities on non-EU markets. The main restriction is the WTO commitment itself, furthermore the remote likelihood that products currently not enjoying subsidy (but which, on the basis of the commitments undertaken in the WTO, can receive subsidy) will once again be subsidized.

As regards customs duties, calculations made taking into account the actual customs revenues for the year 1999 show that the customs level for 2001 on the import of agricultural and food industry products originating from the EU will be around a half of the actual customs level for the year 1999. There is significant spread in the customs levels by product group: between 0.67 per cent and 48.49 per cent for 1999, and between 0 per cent and 41.88 per cent in 2000.

If we examine the question from the aspect of whether the WTO and the EU agreements actually run counter to each other, it is possible to come to the following conclusions: the quota and non-quota (that is, regarding total import quantities) customs reduction system between the EU and Hungary does not run counter to the annual 6 per cent customs reduction commitments already undertaken by Hungary in the WTO. If we assume the new WTO agreement will prescribe a continued annual 6 per cent reduction, and this commitment can be regarded as a minimum, then the – higher – customs reduction undertaken with the EU cannot be considered as running counter to this. At the same time the Marrakech Agreement concluding the GATT Uruguay round does not prescribe that a customs reduction exceeding the general customs reductions and used on the basis of reciprocity in free trade agreements should be applied outside the Agreement. This is also in line with the GATT founding document which in the course of ensuring the principle of the largest allowance treatment also considers free trade agreements as exceptions, and in this regard the Hungary-EU agreement is classified as such.

6. The proposal submitted by the CEFTA countries ("CEFTA Paper")

In a proposal submitted in October 1998, the CEFTA countries first brought up the idea of exempting certain developmental investments of countries that had undergone a change of regime as well as the reductive commitments on interest and input subsidies taken out to resolve their agricultural financing difficulties.

On 14 November 2000, Albania, Bulgaria, Czech Republic, Croatia, Kirgiziya, Latvia, Lithuania, Hungary, Mongolia, Armenia, Slovakia and Slovenia also signed the proposal in which they requested temporary exemption from the abovementioned subsidies reduction commitment, furthermore the recommendation that the "de-minimis" threshold be raised in the case of these countries.

In the reasoning for the request mention was made of the negative tendencies in the transitional period following the change of regime in the listed countries, which had caused a considerable set-back in the agrarian economies of these countries. The change of ownership, and the related changes in farm size and production structure, were causes for increased investment demands at the very same time that the new owners had to face up to a lack of capital. Inflation is also a factor here, and this has had a more noticeable effect on input costs than in the prices of agricultural products, that is the gap between prices of agricultural and industrial products widened.

The losses which followed in the agrarian economy could only be stemmed through well planned developments and, temporarily, larger volume investments, but these moves, for objective reasons, can not be realized within the frameworks of either blue or green boxes. For this very reason it is reasonable to evaluate the request for exemption contained in the submitted proposal as a justified demand. Acceptance of the proposal depends on the outcome of forthcoming negotiations.

7. Special protection measures

Prior to the Uruguay round, the importance of safeguard measures in the structure of import protection measures was marginal. This was primarily because the other import protection measures were easier to implement, and the application of the operational system of conditions for the safeguard measures was extremely rigorous. Following the Uruguay round there was a fundamental reappraisal in this area: **special safeguard** measures were established as a part of the **Agricultural Agreement**. These special safeguards eased the utilization and increased the practice of this type of import protection measure. This did not mean, however, that the new special safeguard measure would become an overnight hit on the international trade scene.

Since the special safeguard, in the sense of the Agricultural Agreement reached at the Uruguay round, was only to remain valid as long as the reform process lasted, and this soon expires, the question of whether the SSG has a future at all is currently being hotly debated in preparation for the new round of talks, as is the question of whether the advantages stemming from SSG can compensate the actually generated or hypothetical anti-liberalization and anti-GATT consequences. In the course of preliminary negotiations there was bitter dispute between those countries which wanted to see the continuation of SSG (EU, Japan, South Korea, Poland) and those who argued that the normal GATT safeguard clause was sufficient i.e. there was no need for the continued use of special protection measures (USA and the Cairns Group).

According to the **opinion of some of the countries**, the introduction of the special safeguard measures was of extraordinary significance. On the one hand the special protective measures provided security for the agricultural and food industry products in the face of GATT liberalization, the opening of markets and the guaranteed obligation to ensure access to markets. These measures provided the type of protection that the normal safeguard clause could not guarantee, since it is technically very difficult to demonstrate the "serious damage" necessary in order to employ the normal safeguard in such a diverse sector as agriculture. Recently, several member countries have raised the need to abolish SSG since the GATT normal safeguard option is available, although the normal safeguard damage test is expensive and time consuming, and thus it is not popular with member countries. On the other hand, a considerable advantage of the special protective measures lies in the fact that their introduction contributed to a large degree to the adoption of the entire "market access package". In general the protective measures have a "psychological" role in lessening the fear of countries to considerable market opening.

Naturally, there are **opponents of the use of the special safeguard measures**. They believe that some of the problems related to the special safeguard measures are an infringement of the basic principles of GATT, while another group affects the very applicability of the import protection measures.

In Hungary the promulgation into law of the Agricultural Agreement took place relatively late, while it was enacted in, for example, the EU in early 1995. The regulations governing the special protection measures were finally promulgated in Act IX of 1998, with effect from 15 March of that year. With the passage of the law the Agricultural Agreement became a domestic law, and thus this eliminated the legal obstacle to the practical implementation of SSG.

Prior to the implementation of the law, Hungary had registered 117 agricultural and food industry product groups (comprising roughly 1000 products) in case of the possible need to utilize SSG.

However, Hungary has not maximized the opportunities made available under the law. Because of the operational restrictions of SSG – current imports and imports arranged on a quota basis linked to minimum market access opportunities cannot be the subject of SSG, although imports arranged on these quotas have to be taken into consideration in order to establish the index quantity – the introduction of SSG demands an extraordinarily complicated monitoring system. **The lack of a local, up-to-date tracking statistical system** also complicates the applicability of, first and foremost, a **quantity-based customs surtax**. This complicated evaluation system which is not underpinned by a database is one of the main obstacles to the fact that Hungary (in contrast to numerous other countries, for instance Poland) is not active in the field of the application of special protective measures: following the entry into force of SSG, price-based customs surtaxes were introduced only very much later and then in a single year on only two product groups (raw and refined sugar).

Negotiations and exchanges of views on the continued maintenance of SSG will become **more concentrated** in the coming period, since the applicability of this measure is shortly to expire. Together with numerous other countries, both the EU and Poland, which aims at accession along with us, have taken a stance on the continued applicability of SSG. We believe that the maintenance of this means of import protection is also **necessary for Hungary**, since special safeguard measures hold out an excellent opportunity for Hungary to

realize a smoother and more trouble-free accession to the European Union, and they could play a significant role in our trade policy measures guaranteeing domestic agricultural and food industry import protection.

8. Minimum Market Access

At the time of the closing of the GATT Uruguay round in 1993, the achievements of the negotiations were summarized in the Final Act. The Agricultural Agreement constituted a section of the Final Act. The section of the Agreement including the further liberalization of market access contains the regulations for minimum market access.

Minimum market access in the area of dutiable products means continued market opening which opens preferential import quantities on those products the import of which has not reached 5 per cent of consumption during the basic period (1986-1988). "The opportunity for preferential market access should be provided in the frame of a preferential customs tariff rate customs contingent, and with the application of pre-customs or other, but lower than the customs equivalence, customs, principally on the basis of most favoured treatment. (Glattfelder, 1994)

In order to lay the groundwork on which to base our standpoint represented at the Uruguay round of GATT, Márta Spitálszky and Sándor Mészáros of this Institute drafted a study with the title "Customs equivalence and import liberalization calculations on the GATT agreement". At the talks we employed the methodology from this study, although we carried out the calculations according to two viewpoints.

In the first case an examination was made of the changes in the consumption level alone, and thus we calculated the imports of the original (1986-1988) reference period, but consumption in the current period, that is the period between 1996-1998. By doing this we wanted to track the impact of the decline or increase in consumption level on the list of commitments. However, since we clearly recognize that aside from our consumption there have also been enormous changes in the food industry foreign trade sector since the end of the 1980s, in the second case we took into consideration changes in our import structure, that is we defined the current market access as the average of the imports of the new reference period, i.e. 1996-1998.

In both cases we separated the following groups based on the quota quantities obtained as a result of the calculations:

- Imports of the given product account for more than 3, respectively 5 per cent of our consumption, that is we should not open up the product to preferential quota.
- Imports of the given product account for more than 3 per cent of our consumption, but do not reach the 5 per cent level, that is we should open up preferential quotas only at the end of the commitment.
- Imports of the given product do not account for 3, respectively 5 per cent of our consumption, but we should open up a smaller quota than in the original commitment.
- Imports of the given product do not account for 3, respectively 5 per cent of our consumption, moreover we should open up a larger quota than in the original commitment.

After an examination of the results of the two calculations it is possible to state that if we only take the change in consumption into consideration, then we should open up a larger quota than the present commitment for most of the products (42 per cent). However, since the end of the 1980s the import increase was more significant than the change in consumption in the case of the majority of products, and this is why according to the second calculation today we should not open up a minimum market access quota to around a half (48 per cent) of the examined product ranges, and we should only employ the last (5 per cent) quota in the case of a further 10% of the products. Naturally we must also make mention of the fact that calculating on the current reference period (1996-1998), our country should open greater preferential quotas than the original commitment on 29 per cent of products, among them such significant product groups as fruit and vegetable juices, pork and poultry products.

Agricultural employment, with particular regard to the situation of the women's labour market (1990-2000)

by Eszter Hamza, Krisztina Miskó and Erzsébet Tóth

The necessity of conducting employment research, and within this research dealing with the characteristics and the role of the women's labour market, including its future, is provided by the combination of the following factors:

- in the wake of the social-economic transformation that took place over the course of the 1990s, **the agrarian sector and the population living in the countryside were particularly hit by labour market changes which gave rise to an uncertain, and indeed still not resolved situation.** An accurate and realistic exploration of this situation is all the more important in order to ensure that it is possible to base decisions for the coming period on experiences garnered over the last decade, and so that negative tendencies may be avoided;

- the remedying of the long-term critical situation of employment group-, sector-, region- and settlement-type problems in order to **reduce tensions** is made all the **more urgent by approaching EU accession**, bringing forth new requirements for the formation and acceptance of mould-breaking employment forms, as well as registration and statistical monitoring which represent work rights guarantees;

- **European Union employment policy is increasingly – albeit not in an obligatory form – coming to the forefront of economic decisions and social consensus** in order to ensure increasing utilization of the existing workforce capacity, as well as the creation of complete equality of opportunity between the sexes, which were expressed in employment objectives accepted at the EU summit in Stockholm in the spring of 2001:
  - the current 62 per cent European Union average employment proportion must be raised to 67 per cent by January 2005 (according to the Central Statistical Office this proportion in Hungary in the last quarter of 2000 was 60.9 per cent);
  - 57 per cent was set as the employment target figure for women by the abovementioned date;
  - efforts must be made to increase the employment proportion of older people between the ages of 54-64, so as to raise the present 35 per cent ratio to 50 per cent by 2005 (in Hungary the employment proportion of people falling into this age bracket barely exceeds 30 per cent).

On the basis of the above motives and aims, and as a continuation of research examining the employment situation in the agricultural sector, our study analyses one particular area of the question, the labour market situation of women working in the agricultural sector, in such a way as to allow us to obtain a picture of the earlier formation and the latest characteristics of the employment situation of the national economy and, within this, the agricultural sector. The aim of the research is to track changes related specifically to women, and to sketch out the tensions that have arisen from the evolving employment situation, as well as the possible solutions. The examination details the topic as a part of national economic processes; it should be considered as a question having significance beyond the framework of agriculture alone, belonging instead to a wider

interconnected system of regional development. In the recent period of research, this complexity of content refers to the viewpoint of the examination, the method of problem solving, and it does not mean the detailed analysis of complex social economic relations. It was thus our intention to draw attention primarily to the most difficult problems and contradictions of employment without providing concrete recommendations for their solution (or at least alleviation) since these generalized "recipes" are far from useful.

The factual analysis of the changes – depending on the available statistical data – encompass the entire decade of the 1990s, and we have also endeavoured to demonstrate regional differences. We have devoted particular attention to the new, flexible employment forms in the labour market, the circumstances of their formation, and the tensions and contradictions which derive from the lack of mutual interests of both employees and employers and from shortcomings in state guarantees. The need to improve the employment situation and the demand for clear-sightedness are made all the more urgent by the approaching EU accession. For this reason we also provide a summary overview of EU employment policy directives designed to increase equality of opportunity, as well as exploitable experiences for their realization in Hungary too, with particular regard to European Union support programmes promoting women's employment.

In the course of our work we used evaluation studies of the labour market organizations and county employment centres, and experiences based on personal consultation to evaluate the different programmes. A summary of notable generalizable features was built into the parts of the study concentrating on situation evaluation and suggestions, and we ignored the individual assessment of endeavours and programmes due to overlapping intentions and indicated problems.

The following is a survey of the study's most important statements, conclusions and proposals in order to improve the employment situation:

- Besides the **constant and apparently unceasing decline in population**, another demographic warning sign of particular note is the **unchanged low birth rate** and the population's increasingly unfavourable age composition, with a population comprising 48 per cent men and 52 per cent women. Contrary to the general tendency observable in the European Union, in Hungary the **men-women proportion is widening**, which, due to the high male mortality is **tipping the balance increasingly towards women** as we look at increasingly old age groups. (In the age group of over 60 years, the proportion of women to men is 1.5, while the proportion in the over-70s is close on two-fold.) From this fact, there are **two imperative tasks** within European Union goals, which also happen to coincide with our own interests. First, to increase population growth, which growth can be stimulated by social policies promoting natural growth, and the more efficient application of health protection programmes. Secondly, efforts must be made to break the **exclusion of the over-40s age groups from the labour market**, which over the last decade has become ever more general and is a **hotly debated topic**. At the same time efforts must be made, naturally, to raise the training and skill level of the labour force, and to expand the areas of activities.

- Between 1990-2000 **employment measured for the entire population fell from 49.0 per cent to 38.6 per cent, while the economically active among those of employable age fell from 77.2 per cent to 61.3 per cent,** which figures actually

indicate a fall of 1.2 million in the number of employed. However, the number of employed has slightly increased from 1997, but it is still not sufficient to reduce the oversupply on the labour market.

- There is a **10-12 per cent shortfall in the economic activity of the sexes, to the disadvantage of women**. The number of inactive women of working age was 27.2 per cent in 1990 and in 2000 this **figure approached 44 per cent,** which is 10 per cent above the similar indicator for men. Thus, in just a decade the under-utilization of women's workforce capacity increased 1.6-fold, which from the point of view of livelihood – assuming the majority of families are still dual income earners today - derives not from the gaining ground of women's traditional roles (also advertised as a social policy aim) but rather follows from the (long-term) loss of a workplace. The growth in economic inactivity of those of working age is a clear indicator that an **increasing burden falls on a declining number of employed in the population**. While in 1990 100 active earners had to support "only" 123 economically inactive people, today this "demand" – after a peak of 182 persons in 1996 – approaches 168 persons.

- The **decrease in the rate of unemployment** (under 10 per cent in 1999-2000) **could in itself be a very positive sign**, but inaccuracies in official registrations disguising the true situation and the extremely low employment ratio even on an international comparison together draw attention to the fact that even with dynamic economic growth it will still be very difficult to move from this level. Between 1990-2000 **the number of the inactive population of working age grew 1.7-fold**, increasing by 1.07 million people, and when combined with the unemployed it takes the figure to **2.3 million people**. At the same time this means that the under-utilization of the workforce capacity between the two periods mentioned grew **from 22.7 per cent to 38.3 per cent**.

- From among the different national economic sectors – regarding all the employer organizations – **agriculture was hardest hit by cuts in the workforce**. The employment share of the agricultural sector has fallen by more than a half in comparison to its share in the first year of the decade (from 17.5 per cent to 7.4 per cent). **Job cuts in agriculture and forestry plus the food industry account for nearly 52 per cent** of the total number of dismissals of the workforce in Hungary, which can be considered particularly difficult and unfortunate for the population living in the countryside, which is tied to agriculture. Contrary to increases in the number of employees in other sectors of the economy, **it is worrying to see that the workforce is still being cut in the agricultural sector**, which - due to the character of agriculture as a means of making a livelihood in the countryside and of retaining the population in the villages - is a particularly worrying process, not to speak of the extremely good conditions and production traditions from the aspect of the country's agricultural production. **As regards the future – and taking several factors into account – the maintenance or a limited reduction in workforce employment in agriculture can be supported, although it must be reckoned that traditional, full-time agricultural employment will be switched in favour of a combination of more flexible forms**.

- The production sectors **employ women to a lesser degree** and a declining proportion compared to men. Compared to the other national economic sectors, the **proportion of women employed in agriculture is lowest**. The difficult working conditions in agriculture never permitted the increased employment of women in the sector. The decline in industrial activities and in labour-intensive sectors, as well as the mass closure of administrative positions has led to the **further reduction in women's already modest employment proportion**. The 24 per cent share of women employed in the agricultural sector is 10 per cent and 20 per cent below that of the averages for the industrial and national economic branches, respectively. Women carry out more than half (54 per cent) of the activities in the tertiary sector.

- In line with international trends, one can observe in Hungary too the **increasingly unfavourable age composition of those employed in the agricultural sector**. The "backbone" of those working in agriculture, with a share of 61 per cent, is made up of the middle aged and those from the older age brackets, which figure matched against the figures for industry and the national economy as a whole is still the highest. **The sector's low income generating capacity is not particularly attractive for the younger generation**. This fact is backed up by data from **ÁMÖ (General Agricultural Survey) 2000** related to individual farmers, **since the average age of men carrying out individual farming activities is 53 years**, and that of **women 60**. Around quarter of those carrying out individual farming activities are women, and a mere 0.2 per cent hold a higher educational qualification. Preliminary data from ÁMÖ draw attention to the need of improving the workforce quality characteristics.

- There has been a **positive change in the composition of workers in agriculture according to their school qualifications**, although this movement has by no means ended the shortfall in relation to the other sectors of the economy. **More than 40 per cent of active earners** are still poorly qualified employees, while the national average is around 21 per cent. It is a particularly noteworthy fact that the positive shift in qualification level has primarily to do with the mass redundancies and only partly to do with the modernization of the training system, in other words it is the result of a conscious adjustment to the new conditions.

- Looking at national data for 1990-1999 examining income disparities it is apparent that over the decade of the 1990s **the gross average income in agriculture was 20-30 per cent down** on the averages for the industrial and economic sectors. What is conspicuous is that the **differences are increasing**, which also increases the disadvantages in agriculture. The HUF 7000 difference in the average earnings in 1992 had grown 3.5-fold by the end of the decade. A comparison of earnings according to sexes sketches a **clear picture of the disadvantages faced by women**. The income of women working in agriculture in 1990 was around **30 per cent lower than that of men**. The difference had halved by 1999, the primary explanation for which can be found in the sector's deteriorating profitability. The earnings disadvantage of women working in agriculture is also apparent in industry and nationally, measured both against their own sex and against men. In comparison both to the industrial sector group and the national average earnings of women, the remuneration of women working in agriculture lags 28-32 per cent behind. **Thus women working in agriculture suffer both from the unfavourable situation of the sector and from the disadvantages stemming from their sex**.

- The **risk of becoming unemployed affects the two sexes of employees in different ways**. In this regard, marked differences can be outlined in three definable periods over the ten years. The first period includes the years **from 1990 to 1993/1994**, characterized by a general and extremely rapid deterioration in the workforce situation, **although the capacity of women to maintain their jobs proved to be better than that of men**, signalled by lower unemployment among women (41.4 per cent). In the following period (1994-1997) the labour market situation of men became more advantageous, as there was an increase in their employment, **while women's labour market indicators deteriorated** as they were increasingly shut out of the labour market. In many instances women's repeated employment fell through due to the husband's work or the need for him to retain his workplace. Taking into consideration the calls on time and the costs (clothing, costs travelling to and from work) against the – usually low – wages women received for working, in many cases women decided to stay at home because it was possible to grow and raise sufficient produce around the house to maintain a family, and the various supports, supplementary benefits, assistance supplemented by income from occasional work proved to be very competitive in comparison to the low wages.
- Despite the impaired performance of the sector over the last decade, and the critical employment situation in the regions and small settlements, **agricultural activities** are playing a **revalued, important and increasing role** in the establishment of a livelihood for those living in the countryside as well as serving to **dampen social problems**. Agricultural production carried out as an independent activity helps people bear the disadvantages stemming from unemployment and increases the "tolerance" of those concerned.
- The balancing role of agriculture, which comes with generally short-term advantages and low living standards, and lacking other opportunities, also serves to **conserve the tension-packed rural employment situation**, delaying a resolution to these problems, which would bring a palpable change in quality. Although the untaxed income or low-taxed income of families battling long-term unemployment and relying upon "multiple-resource" family income options represents in the **short-term** a resource for a modest living standard, it does not cover, and it is not designed to represent entitlement to a **pension, health care and benefits** which gain in importance later on in life.
- The **majority of enforced farms**, given the appropriate stimulation, support, and by taking over the role of the disintegrated production integration – with the establishment of new integrations or the restructuring of the old – can be developed, and can move into a situation where **income is declared**, which can be a positive advantage for those concerned even if later on this activity, as a part of rural life, becomes a **supplementary source of income** deriving from the primary activity.
- Adjustment to the unfavourable effects of economic-social change created several specific combinations of **livelihood-employment solutions** – **primarily enforced** – within the rural population living from agriculture. On the one hand these forms indicate the inventiveness **and a high degree of flexibility** on the part of those concerned, on the other hand they only provide the opportunity of attaining a **low living standard**. Without the appropriate guarantees of work rights and social security, an ever increasing proportion of the population will be squeezed out of the legal labour market and the different provision systems, by the fact that they are **totally uninterested in accepting legal employment**.

- The gaining ground of flexible employment forms without appropriate regulation and the interest of the employees at heart has a negative impact because of European Union accession and also because of the necessity of domestic clear-sightedness. Such regulations can result in the **transparency of the labour market** in which the **short-term advantages deriving from low taxation and from the absence of contribution payments are overshadowed by the advantages stemming from guaranteed contributions** accompanying legal employment. In this case first and foremost it would be useful to reduce the labour force's costs, high even by international comparison.

- **A vigorous agricultural linkage to rural livelihood and employment in the long-term is conceivable**, but its **role** in providing a wage to the population – in line with international trends – will in all **probability decline**. The retention of the rural population can be attained through the expansion of activities related to the agricultural sector, by taking on tasks which are linked to agriculture indirectly (environmental and landscape protection, preservation of the culture), and the stimulation of the workplace-generating capacities of other national economic sectors.

- The employment policy directives of the **European Union** established together with - albeit not obligatory on - the member states can be realized through the mediation of Social Fund-financed programmes, and subsidy forms which can be listed under community initiatives. **The guiding principles of employment policy urge an increased level of job creation and employment**, stimulate entrepreneurship, the **development of adaptability and the creation of labour market opportunities**. These basic pillars are concretised in the **member countries' action plans**, in which a recommended basic principle is the **increase in the ratio of the employment of women, and equal opportunities**.

- The employment policy of the member countries of the European Union is directed towards the division of the social working day base, which favours **flexible solutions** (self-employment, part-time employment, defined-period working contracts) instead of the traditional full-time employment forms, while it moderates the work right and social security differences between them by having the **state take a role**.

Thus, in conclusion one can state that a significant part of employment tensions in Hungary are by no means a "non-specific" characteristic, the remedying of which concerns all employees. However, the disadvantages faced by women are apparent in their lower wages and placement difficulties stemming from insufficient training. Over and above this, the role of bringing up children is an undeniable 'magnetic' drawback in the family division of labour, restrained by the lack of child care institutions, or in the case of certain strata, simply these being unaffordable.

The following methods and directions are suggested as ways to improve the employment situation of those women living in the countryside who are primarily tied to agriculture:

- the proportion of part-time, flexible employment forms related to agriculture must be increased;

- it is necessary to expand the range of activities, which can extend from the production of basic materials to the different levels of processing, the production of quality products and quality improvement, demanding an increasing proportion of labour input;

- guarantees of work rights and social security still have to be created in such a way that both employers and employees have an equal interest in them;

- the range of activities outside agriculture has to be stimulated, which among others can mean the industrial and handicrafts processing of agricultural products, and an improvement in the level of services and social facilities;

- it would be useful to gradually link the rural population into local tradition preservation and promotion schemes, and which can serve to expand village tourism;

- based on examples in the European Union, particular attention must be given to the gaining ground of civil organisations, as these indirectly improve living conditions and play a role in job creation.

Issues concerning the upstream and downstream sectors of animal feed products

by Márta Stauder and Hartmut Wagner

Present study has set the **objective of analysing the upstream and downstream sectors of animal feed products**. This, however, is a daunting and highly complex task requiring various approaches and analyses, covering crop farming, turf production, the use of forage and fodder, industrial feed mixes and imported protein feeds, as well as the issue of animal feed utilisation. At the same time, looking at the market one should notice the growing importance of logistics inside and outside the plant as a tool of cost reduction and increasing competitiveness.

Trends on the world's feed markets and within the EU must be followed most closely as well. Here, we mean primarily the necessity to take market demands into account, i.e., **gaining or re-gaining the confidence of the consumer** (in the study we are obviously concerned with **consumers of finished animal products**). In terms of producing animal products this means **traceability going all the way back to fields under cultivation and the company producing feed mixes.** The task is made all the more difficult by the fact that consumers generally are rarely concerned with scientific issues, while this is exactly what food retailers primarily keep in mind, because the 'consumer is king', but retailers 'set the rules' for agriculture and the food industry.

The analysis of forage product upstream and downstream sectors and the feed market is an easier task by using numerical data, than in the case of industrial feed mixes, because in the latter case producers come from two sectors (i.e., mill industry and feed production) where data and other information are not easily available. Therefore, present study will concentrate primarily on identifying correlation and the comprehensive treatment of the topic.

During the past decade, Hungarian agriculture underwent **significant changes and restructuring**, which affected the feed industry as well. The changes had an impact on both production (i.e., a shrinking animal stock, consequently, reduced demand for feed) and on ownership structures. The **basic problems of the feed product upstream and downstream sectors** may be summarised under the following points:

1. In the 1990s, **the production of field crops, including corn farming**, has been characterised by **low yields per acre and high fluctuations in crop averages**. This is explained primarily by the decline in production quality. Due to the capital shortage and liquidity problems in the last few years the agricultural sector was forced to take austerity measures, which resulted in reduced capital investments in all technological components where this was still possible without fully jeopardising corn farming. Furthermore, as a result of shifts in land ownership, producers of bulk and forage feed have changed as well, while the unregulated corn market produced wild swings in corn prices.

2. With the exception of horses, **in the 1990s the animal stock in the stock-farming sector** suffered major losses. With a modest growth in specific yields, there has been a significant, in some cases drastic drop in the production of animal products. Due to BSE and the ban on mixed animal proteins, the structure of forage and feed utilisation in the

new millennium is expected to lead to additional adverse effects. If by-products of pork- and poultry-farming and processing will also be banned for purposes of forage, **costs in the sector will continue to rise substantially.** The rising cost of substitute and replacement feed also contributes to the ever increasing costs in the feed industry. The physiological effects of products replacing feed based on animal proteins (i.e., slower growth rate in animals) act as a third cost-enhancing factor. At the level of processing and distribution of animal products, surplus slaughter-house capacities and weak pricing position pose a serious problem in relation to food wholesalers.

3. **In the area of feed import, the market is increasingly dependant on imported protein-based feed.** The import of animal feed and, within that, primarily protein import represent a significant percentage of the total agricultural and food industry imports. Between 1996 and 2000 this figure was around 20%. Over the past five years, Hungarian feed import amounted to USD 175-230 million; following a peak in 1998, import fell dramatically in 1999, while in 2000 it climbed back to the USD 200 million threshold. Soy-based products make up the bulk of total feed imports with a share of total imports regularly around or exceeding 80%. The country is suffering competitive disadvantage due to its geographic position, e.g., Hungarian feed producers pay USD 25/t more for soy meal than their counterparts in EU member countries.

4. Compared to the large volume of feed import**, Hungarian feed export plays an subordinated role, although growing conditions would allow the expansion of export sales.** In the mid 90s we had once reached a USD 55 million export volume, after which exports gradually declined primarily due to difficulties in the vegetable oil sector. Our most significant export markets are Germany, Romania and Poland, while the most important export items include feed concentrates and other feed mixes, oil-cake made of sunflower, rape (*Brassica napus*) and rape-oil, leached turnip (*Brassica rapa*), as well as maize and corn bran, flour and pellet. Due to the large volume of protein import, **the trade balance of the feed sector produces regular annual deficits between USD 140-200 million. So far this has been offset on the level of national economic output by feed corn export, although in the last two years the two sectors' combined surplus has declined significantly.**

5. **From the point of the country's agricultural trade balance, the exchange rate loss suffered both by the sector's input and output sides has been one of the major problems over the last five years (i.e. import is usually settled in US dollars, while the export of animal products in European currencies).** Since the mid-90s the US dollar has gained over 30% against most European currencies. Although (despite depressed world prices), the price index of our beef, pork and poultry exports improved over the import price indices for major feed products, the percentage of turnover paid in USD within feed imports in 2000 again reached 85%. However, export turnover in the two forage-dependant animal stock-breeding sectors' total trade turnover settled in USD follows a declining trend. In 2000, only two-fifth of pork and barely 7.7% of poultry export was sold for US dollars.

6. Following systemic changes, the **feed production industry was privatised** and a process of intensive concentration got under way. The largest feed plants are owned by foreign investors. **Even so, to this day the sector is characterised by low utilisation of available capacity and outdated technologies are still applied in most plants.** The feed industry is further burdened by the fact that there is little effective demand in the

stock-breeding sector; in many instances fodder for the production of livestock must be financed by the industry, which carries considerable risk. In addition, consumers press for new demands (e.g., feeds free of animal protein; rejection of genetically modified organisms, etc.) but are unwilling to pay for increased costs.

7. All phases of the product upstream and downstream sectors are **characterised by a high degree of diversity, which greatly impedes attempts at regulation.** Prior to the systemic changes, officially declared free feed distribution was realised within limits (i.e., purchasing of table-grade cereals, cereal export and protein import were conducted through one-way, fixed channels). Today, as a result of the separation of crop farming and stock-breeding and the increased number of productive private farms, the bulk of feed grain is distributed through trade channels. **In general, the feed market is characterised by significantly more sellers and buyers than before the political changes.** The feed protein import market has become a market with multiple players as well. Former state-owned foreign trade companies became import-export wholesalers; GMV's (former Grain Distribution and Milling Co.) production and distribution of feed products declined. There is strong competition on the market of feed mixes and supplements, and there are signs of intensifying concentration. Market shares of larger producers are constantly fluctuating. Shops operated by producers, ÁFÉSZ stores, farming equipment stores and other consignment or independent outlets are all part of the retail distribution network. Consequently, **the importance of logistics continues to grow, because the specific cost of shipping feed products in large volume is rather high.**

The effects of the agricultural trade liberalization process between Hungary and the European Union

by Anikó Juhász and Márton Szabó

1. In the period of the gradual liberalization of trade between the European Union and Hungary, but first of all in the second half of the nineties, Hungarian agricultural exports to the Union have been slightly decreasing in USD terms. The structure of the Hungarian export by main product groups has been strongly concentrated – dominated by living animals, meat and meat products as well as fruits and vegetables – and this structure has been very stable over time.

   Hungarian agricultural imports have stabilized in the late nineties between 400 and 500 million USD. The structure of imports has been much less concentrated by product groups than that of Hungarian exports and it has shown more changes over time.

   Hungarian surpluses from agricultural trade with the EU decreased considerably during the late nineties and it amounted to only 586 million USD in 2000. In spite of this, Hungary continues to be the only acceeding country from Central and Eastern Europe with a constant and significant surplus from agricultural trade with the Union.

   The share of the EU from all Hungarian agricultural exports has been around 45 per cents in recent years while 40 to 45 per cents from all agricultural imports.

   The share of Hungary within all extra-EU imports of the Union has been declining slowly but consistently during the nineties and it has recently stabilized around 1.8 per cents. In contrast to this tendency, the share of Hungary from all extra-EU exports of the Union has risen during the last decade and it was 0.9 per cent in 1999.

2. Although the utilization of the preferential quotas for Hungary has significantly increased in recent years, it is far from 100 per cent yet for a number of products.

   The positive impact of the Europe Agreement was reduced by the difference between the structures of the preferential quotas and that of the Hungarian export supply. The operating mechanism of the Agreement was inelastic and it reflected the trade pattern of the late eighties, virtually maintaining the Hungarian export structure of those years which, obviously, had not reflected the comparative advantages of the country.

   The trade figures of the last decade are suggesting that a complete or a partial elimination of trade barriers does not automatically result in an increase of trade volumes. The unchanging structure of the Hungarian export suggests that a major export boom can not be expected in the coming years, either – while, at the same time, significant changes may occur on the import side.

   Trade concessions can fundamentally only establish preconditions and possibilities to an export increase but the effective utilization of the opportunities depends on competitiveness.

3. The agreement between the EU and Hungary, coming into force in July 2000, was a significant step in the liberalization of trade relations and in the accession process. Beyond the elimination of import tariffs, as major achievements can be considered the the reforming of the quota management (adoption of the first come – first served principle), the appearance of new, formerly almost not exported goods on the preferential product list and the amalgamation of preferential quotas with different concession levels for the same product.

The new agreement classifies the agricultural products concerned into three groups.
For the products of the "Double Zero List" the EU and Hungary mutually abolish all custom duties without any restriction on volumes. Products going under this category are among others breeding animals, ham, offals, oilseeds, sugarbeet, tropical fruits, nuts, coffee, spices.

For the products of the "Four Times Zero List" or Accession List both export subsidies and custom duties will be mutually eliminated up to the highest export level, as a quota, achieved in the past. Products on this list are poultry meat, swine meat, cheeses and wheat.

The "Classic List" contains quotas with preferential import levies similar to the 1991 Europe Agreement. Important Hungarian export product on the list are maize, honey, asparagus, mushrooms, plums, malt barley, beef products and preserved sweet paprika. Major imported items are rice, rye, slaughter by-products, plant bulbs, tomato and vegetable oil.

Besides the three lists of the 2000 agreement one should not forget about those product groups for which though the new agreement has not brought changes but these goods continue to enter the EU and the Hungarian markets with preferential conditions fixed in the original agreement and, according to that, with annually increasing quotas.

In the period of gradual trade liberalisation between Hungary and the EU, but above all in the second half of the nineties the Hungarian agricultural export to the EU had a slightly decreasing tendency.

4. According to our analyses it can be stated that in the first half year Hungary was not able to exploit the opportunities from the New Agreement. On the other hand it is also a fact that in case of the products of the Agreement the Hungarian export to the EU decreased in general in the last three years.

   In the second half of the year 2000, compared to the same period of 1991, Hungarian exports to the EU increased only in case of the products of the "Classic List", which was more than counterbalanced by the decrease in the Hungarian export of products on the other lists.

   It seems that the EU, on the contrary, could exploit the possibilities of the Agreement more successfully, because the EU was able to increase its export to Hungary in case of almost all of the lists. The most important growth occurred in the export of the goods belonging to the "Classic List", but even the slightest increase – products of the "Double Zero List"- was more significant than that of the Hungarian export.

   Considering the structure of the preferential trade, it can be stated that in case of the Hungarian export to the EU the most important list was the "Four Times Zero List", and in case of the EU export to Hungary the most significant list was that of the "Double Zero List".

5. Three sensitive products have been chosen for detailed analysis from the preferential Hungarian export to the EU: swine meat, cheese and honey. From these three products Hungary exported the highest volume from swine meat. There has been no increase in the export of any of the three products since the new Agreement came in force. Compared to the same period of the previous year the export of all three products decreased - although it is also true that looking at the whole year the difference is not so significant, so the increase of the export in the first half of 2000 almost compensated the decline in the second half of the year.

Similarly, three products have been chosen for analysis from the preferential export of the EU to Hungary: swine meat, cheese and rice. The EU, in contrast to Hungary, could significantly increase its exports from the chosen products. The export of the above mentioned three products together tripled in the first six month of the new Agreement. The most significant export expansion was made by rice.

The analyses of the product quota utilisation of the three lists showed that the EU export to Hungary reached in every case at least half of the yearly quota amount, which means that the quota utilisation of the EU in the second half of 2000 was complete. Hungarian exports, on the contrary, exceeded half of the yearly quota only in case of the "Classic List". Thus, it is safe to say that the European Union had a better assessment about prospective products and about future quota utilization.

In the preferential export from the EU to Hungary from the three chosen products, the quota utilisation level of swine meat and cheese ("Four Times Zero List") was quite high. Although in case of rice the export volume did not reach the half of the annual quota, the lower utilisation level was rather due to the extremely large quota and not a weak export activity.

From the preferential Hungarian export to the EU of the three sensitive products the quota utilisation level of swine meat and cheese ("Four Times Zero List") has not been too high. And in case of honey (Classic List) there are no quota utilisation figures simply because there is no volume limit (quota) on the Hungarian preferential export to the EU.

6. In the last section of our study/paper we analysed the markets of a few important, in the Agreement incorporated product in detail: the export markets of swine meat, cheese, honey and fish, and the import and domestic markets of the swine meat, cheese, rice, fish, fruit-yoghurt and wine. We summarise our findings in the following:

Export markets:

- The Hungarian export quota utilisation of swine meat in the second half of 2000 had been fair. The competitive position of the Hungarian exporters disproved through the Agreement, because the eliminated tariff burden proved to be lower than the previous amount of export subsidy which is not receivable since the new Agreement. The most probable reasons for the moderate swine meat quota-utilisation of Hungary are the general competitiveness problems of the sector.
- The main export markets of the Hungarian cheese sector are outside the European Union. The export to the European Union is on a very low level, and until now the new Agreement could not change this situation.
- In the second half of 2000 the export of honey from Hungary to the EU did not increase significantly, and we have to consider Argentina and Romania as serious competitors on the EU market.
- A significant increase in the volume of the carp export through the new, in 2001 concluded fish trading agreement is not really probable, it is more realistic to await the growth only in the returns. The Czech Republic and Poland are our most important competitors on the EU market.

Domestic markets:

- Imports of swine meat from the Union soared in the second half of 2000, fulfilling the quota for the year ending in June 2001 to 87 per cent – indicating the competitiveness of imports from the EU against domestic production.

- Cheese imports from the EU will create a keen competition but the Hungarian market will benefit from this because of the quality problems of domestic cheeses and, with Emmenthaler-type hard cheeses as well as mould cheeses, for monopoly positions. But Hungarian cheesemakers can hope for a further increase in domestic demand.
- The Hungarian self-sufficiency ratio for rice is a mere 13 per cent. As a result of the new agreement, imports from the Union rose significantly in the second half of 2000.
- The market for fish in Hungary is in for a considerable growth which will leave room for significant imports, too. In the most dynamic market segments – fresh, packaged, fillet, convenience fish and fish slices – domestic processors are getting stronger and are likely to maintain their market shares – which actually means growing volumes in the growing market. Due to its product range, consisting primarily of sea fish, the import does not compete directly with domestic production.
- The share of imports in the Hungarian fruit yoghurt market is currently between 10 and 12 per cents. The new agreement provides an easier access for EU exporters to the Hungarian market that can positively affect market structure, competition an product assortment. Domestic producers – almost exclusively multinational firms – can hope for a further expansion of the domestic demand.
  Even with a full utilization of the preferential quota, wines from the Union could not achieve a 5 per cent market share and, thus, import can only have a marginal role in the coming years. A limited increase of the import can widen the product assortment and facilitate competition in Hungary. Although trade figures have not verified it so far, cheap but good quality (e.g. Italian) table wines can become dangerous competitors to domestic ones.

Evaluation and further development of the agricultural market regime for 2002

by Mária Erdész, András Laczkó, József Popp, Norbert Potori and Teréz Kocsis

Besides a considerable reduction of subsidy titles, a more efficient agricultural regulation system giving less room for fraud should also be introduced. However, this cannot be achieved without establishing a unified and transparent control system, and extending preliminary registration related to eligibility for subsidies.

Further development of the agricultural support scheme must take into consideration EU regulations as well as the challenges of globalisation. It follows that **establishing stable conditions for efficiency in agricultural production and improvement of competitiveness on the world market enjoy priority**. Intensive and environmentally sound production should be regulated in accordance with its significance and the available government subsidies.

Such subsidies should be focused on farms viable on the long-term, while in the case of subsidy policy objectives we suggest that **financing of development and grants which are in compliance with the WTO Agreement be preferred over subsidies earmarked for market penetration and exports**.

An agricultural regulation system typical of countries with developed market economies has not yet been introduced in Hungary. Domestic interventions are usually limited to attempts aimed at eliminating already existing market disturbances. During previous years, hardly any progress has been made in harmonising agricultural regulations with the existing legislation of the EU, thus there is a considerable workload to be dealt with during preparation for accession. This also includes market regulation by guaranteed prices and the issue of producers' safety in terms of supply.

Support granted to plant production sectors in the past few years has put an emphasis on increasing producers' income, while no significant progress has been made in regulations aimed at meeting requirements for accession or promoting efficient production.

In 2000, the Hungarian **cereal** production sector suffered from floods and drought as well. On a market struggling with production shortages, domestic legislation introduced maximum and minimum intervention prices which do not comply with the cereal market regulations of the EU.

Several points of the agricultural support scheme were modified in 2000, of which the cereal production sector was affected primarily by changes of the area based payments and subsidies for purchase of machinery. Area based payments were reduced but in 2001 they returned to the 1999 level. At the same time, subsidies for purchase of machinery increased in 2000, while construction and reorganisation funds continued to shrink. The 2001 regulation reduced the interest rate subsidy on loans granted for wheat and maize for fodder stored in public warehouses from 100% of the previous year to 40%, then for wheat increased it again to 100% before harvest (presently valid until 31 December 2001).

The most important task in further developing of the Hungarian cereal market regime is the introduction of an EU-type intervention system and the establishment of its institutional background. However, we do not yet advise the introduction of direct payments, as this type of income support may draw away considerable resources from important agricultural development purposes on the one hand, and may weaken the sector's competitiveness on the other. Serious consideration should be given to the encouragement of market-oriented producers' co-operatives by granting subsidies for development.

Of **oil crops**, area based payments have been granted for autumn and spring rape seeds as of 1999, for sunflower seeds for industrial usage from 2000, and for rape seeds for bio-diesel production from 2001. Alternative plants such as sunflower seeds for human consumption, pumpkin seeds, edible oil flax and hemp are also on the list of subsidised crops. Oil crops do not receive any other specific subsidies.

The improvement of mechanisation and storage capacity should remain high priorities in the support scheme for the sector. As with cereals, we do not regard the immediate introduction of direct income subsidies as reasonable.

Sugar beet, sugar and isoglucose are included in the group of directly regulated products. In May 2001, a temporary sugar market code was passed setting forth conditions of a quota system for sugar and isoglucose, which was an important step towards EU-conformity of the sugar market regime.

Hungarian sugar beet producers do not have adequate financial resources for technical and agro-technical developments to level themselves with producers in the EU, and revenues in the sector have been declining for years. Considering natural production conditions, a further increase in yields and sugar content requires a long-term and always increasing investment.

The **tobacco** production sector has to prepare for introduction of a quota system, which requires enhancement of the information system. Besides ensuring adequate quality and warranty, the priority objective in **potato** production is to improve the storage and transport infrastructure.

Natural and economic competitiveness of the **fruits and vegetables** sector gives diverse impressions. Particular attention has to be paid to improving competitiveness, which requires consistent professional work and significant development. The lack of plantation cadastre records still represents a problem in granting subsidies. Harmonisation with the EU legislation requires that producers holding membership in fruits and vegetables producers' and sales organisations (TÉSz) be given preference when allocating subsidies.

Despite an increase in subsidies, the agricultural support scheme in 2000 did not encourage the Hungarian fruits and vegetables sector to make much progress in the fields of EU law harmonisation, modernised production, trade and restructuring. Suspension of support for founding TÉSz in 2000 was a highly controversial step, but financial help can be applied for again in 2001. The amount of subsidies supporting market penetration, production and investment have grown considerably in the past few years. Funds earmarked for export, market subsidies and reorganisation have been reduced or have not changed significantly.

In the future, the following points should be taken into consideration in setting forth market regulation measures applicable to the fruits and vegetables sector:

- encourage producers' co-operation, accelerate the establishment of fruits and vegetables producers' and sales organisations;
- improve the technical and technological standards of production, including improvement of infrastructure (storage, sorting, packaging etc.), promulgate environmentally sound technologies;
- accelerate planting of new orchards;
- introduce a quality control system in the marketing of homegrown and imported fruits and vegetables.

In 1999, the natural indices of the Hungarian **vine growing** sector dropped back in almost every relevant respect in comparison with the averages of the period between 1991 and 1995. A positive change, however, is that by the end of the 1990's the area of vine cultivation ceased to shrink, although the pace of planting new vineyards is still slower than desired.

The directions of further development of the grape and wine sector and its subsidy system should be established so as to encourage production of high-quality wine but also to promote production of cheaper products of lower quality classes (table wines, house wines) which represent a significant percentage of domestic consumption.

Subsidies granted to the sector continued to increase in 2000. Resources appropriated for planting new vineyards rose considerably along with the volume of subsidies granted for agricultural marketing or aimed at reducing production costs. There was no change in the level of subsidies for purchase of machinery and land meliorating, while export and agricultural market subsidies and support for construction investments decreased.

In order to achieve objectives in developing the sector, subsidies aimed at encouraging vineyard plantation, establishing winery associations, introducing environment-friendly production technologies, and diversifying activities have to be granted to class I and II production areas. To increase producers' interests, it would be expedient to introduce revenue subsidies subject to compliance with prescribed conditions instead of area based payments and agricultural financing subsidies.

According to the WTO Agreement, exports of bottled wine may not be subsidised from 1 January 2002, while the central budget has already discontinued subsidising exports of cask wine. Funds made available should be spent as Green Box subsidies with the introduction of new subsidy titles and thus re-channelled into the sector. Subsidies could be granted for full instead of partial refunding of qualification costs, for developing the infrastructure of origin protection (a new title), for specific community agricultural marketing programs, for establishing producers' groups, for vocational training of farmers, for merging of estates facilitating structural conformity, for land purchases, for environmental programs and improvement of land, for regional programs.

Agricultural regulations in the past few years, and the agricultural subsidy system in particular, has had an important role in the relative stabilisation of the **livestock sectors**. Although sales prices were higher as a result of price regulating measures, input prices also followed this trend therefore revenues calculated with real prices were still below the level of the end of the 1980's.

According to our calculations, subsidies in the main livestock sectors grew primarily in terms of agricultural market subsidies and subsidies for construction and purchase of machinery intended to boost investments.

Compared to earlier years, regulations of the livestock sectors changed significantly in many aspects since 1999. A price subsidy system based on guidance prices and subject to certain quality criteria has been applied extensively (pigs and cattle for slaughter, poultry, cow and sheep milk). Quality subsidies did not increase production efficiency but together with price subsidies they rather served as instruments for the absorbing of market surpluses (or as hidden export subsidies). Funds for replacement and rearing of quality breeding stocks has been available, as well as normative subsidies for other breeding objectives. In the livestock sectors, market subsidies showed the highest increase during the last few years.

The domestic market regulation of **pig** farming has helped through the sector two production peaks in 1996 and 1999. The Hungarian subsidy system differs from that of the EU as livestock fed on forage in the EU is subsidised to a much smaller extent than in Hungary. The pig farming sector's output is aimed primarily at export markets therefore producers' dependency on world market trends are strong. In handling of market disturbances considerable sums from investment subsidies were distracted which are decisive in terms of competitiveness. In 1999 and 2000, farm investments were essentially not subsidised, except for investments in machinery. Given the limited funds available, in the next few years emphasis should be put on investments improving production efficiency, although support for investments aimed at compliance with the EU environmental and animal welfare regulations is also an essential aspect.

Conformity with EU regulations in **poultry** farming means that internal subsidies will be discontinued. It is important to put an emphasis on subsidising investments improving production efficiency, but compliance with the EU environmental and animal welfare regulations is essential as well.

In livestock sectors based on forage (**pig** and **poultry** farming) subsidising farm reconstruction and new investments to increase production efficiency are fundamental in improving competitiveness (in regards to specific feeding, production, and breeding parameters).

Hungary has attempted to approximate the complex EU regulation pertaining to **dairy** production only in some formal aspects. Although there is a quota system, in its content and operating mechanism it does not comply with the EU regulations. No attempts are being made to extract milk surpluses in the form of butter and low-fat milk powder, and to organise the private storage of certain dairy products. Subsidies granted for extra quality milk do not comply with the EU regulations. Hungarian dairy farmers and the dairy industry are to be made aware of the fact that following Hungary's accession, milk that is not of extra quality shall not be used for human consumption.

Regulation of **beef production** has made the position of the slaughter cattle sector very difficult. Subsidies appropriated for quality production did not prove adequate for producing bulls of high-quality meat in Hungary. The absence of a live cattle export subsidy also keeps prices of quality beef low. Introducing income subsidies for beef cows can be regarded a positive step. However, further measures need to be taken to encourage the development of quality beef production.

Most important objectives in **cattle** farming are to increase the non-milk stock of cows, to improve milking and milk handling technology, and to support the modernisation of forage harvesting, handling, and storing technology. Furthermore, it is Hungary's basic interest to develop and operate a quality certification system which credibly certifies that the country is free of BSE.

Although domestic regulation of **sheep** farming is close to the EU system, it is not adequate for the improvement of production and quality. It would be expedient to combine subsidies for complete farm reconstruction with the encouragement of breed replacement.

The attitude and activity of farmers organisations usually play a decisive role in respect of regulations and subsidies applicable for **other livestock sectors**.

As far as the development of regulations applicable to livestock sectors are concerned, non-refundable subsidies and loan guarantees should be introduced to boost investment.

We propose that, as a long-term component maintainable after the country's accession, fees and charges payable to animal health and food hygiene authorities, and subsidies for animal breeding, breeding management, certification and breed preservation be fully refundable to the institutions providing these services.

Within the group of subsidies facilitating market penetration we propose to discontinue normative export subsidies, and rather to introduce a tender based subsidy system established on actual market circumstances of the particular product. In our opinion, in the **beef and sheep meat** production it is expedient to apply some forms of income subsidies tied to certain conditions complying with EU regulations (e.g. linking production subsidies to financing product councils funds available for market regulation). In the case of other livestock sectors (**horse**, **fish**, and **rabbit** breeding, **apiculture**, **game** breeding) it would be reasonable to reduce the number of subsidy titles.

We propose that all components of the regulation of **milk production, cattle** and **sheep** breeding be drawn up in a consistent system, in the form of a (combined) ministry decree as the execution of the Act on the Agricultural Market Regime.

In respect of market subsidies and procurement of **cow milk** Hungary also have to be prepared for the procurement of butter and low-fat milk powder at intervention prices in order to comply with EU regulations.

Agricultural support in the OECD member countries calculated according to the new methodology – with a focus on Hungary

by Gyöngyi Kürthy, József Popp and Norbert Potori

In May 1987, in the face of the worst international agricultural trade crisis since the Great Depression, OECD agricultural ministers meeting in Paris, in line with the GATT *Punta del Este Declaration* considered it necessary, and agreed to progressively reduce agricultural support in developed countries. The OECD Council adopted two measures originally developed for the Food and Agriculture Organisation (FAO), the Producer Subsidy Equivalent (PSE) and Consumer Subsidy Equivalent (CSE), which became the *de facto* standard measures of support to agriculture.

In 1998, as a result of changes in global economic policies, the OECD reviewed and revised its methodology of measurement of support to agriculture. During the years, member states praised liberalism as a macroeconomic ideology at international forums, while their trade and support policies failed to reflect that approach. **Along the course of reforms of agricultural policies, the number and complexity of policy measures increased substantially**, which limited the use of the PSE/CSE for impact analysis; the increasing number of direct income subsidies was especially hard to deal with.

As originally defined by Josling (1973), the PSE is the amount of money, which would compensate agricultural producers for the loss of income in the assumed discontinuation of certain policy measures. Today, the PSE is used to measure **direct and indirect monetary transfers** from consumers and taxpayers to agricultural producers. In addition to price and other policy measures (e.g. income subsidies, input market actions, direct transfers, price support, quota systems) the PSE also includes more general policy instruments like government spending on non-product associated research. The term ”Subsidy Equivalent” was therefore replaced in 1998 with the term ”**Support Estimate**” while both abbreviations remained unchanged.

Economic impacts of agricultural policy measures largely depend on the way they are implemented hence the new methodology introduced by the OECD as part of a comprehensive evaluation of recent measures **groups policies according to their implementation criteria**. Further, the GSSE (General Services Support Estimate) formerly included in the PSE is treated separately, while by aggregating the PSE, the GSSE, and the transfers from taxpayers to consumers the TSE (Total Support Estimate) can be calculated. The PSE includes two types of support, (1) agricultural policy measures influencing producer prices (Market Price Support or MPS), and (2) actual budgetary payments.

Calculating the PSE is not difficult provided adequate information about agricultural policy measures is available and member states agree on certain empirical questions. The PSE can be given not only for products, but also at **national level** (in which case all transfers are considered as flowing into agriculture as a single sector) or **international level**, or also broken down by **regions**.

The legitimacy of the PSE derives from the unanimous approval of its methodology by the member states. It is important to underline that the methodologies of

calculating the PSE and the Aggregate Measure of Support (AMS) used as a controlling tool of compliance with provisions of the WTO differ substantially, **since the latter does not include Green Box and Blue Box measures**. This explains why, in certain countries, the PSE remains high while support measured by the AMS decreases, and **the difference between the two increases**.

The analysis of the year 2000 macroeconomic indicators of the OECD member states provides the following conclusions:

The **average growth of the economy was above 4%** (with Hungary's 5.2% growth exceeding the average for the OECD members). At the same time, **crude oil world market price increased by 60%.** Such price increase, however, created fewer problems for the OECD region than in the previous periods, due to the decreasing level of oil consumption. **The average unemployment rate for the OECD region fell by 0.5%**, as with the exception of two countries (Poland and the Czech Republic) each member state registered a decrease in this indicator (in Hungary a decrease was as high as 0.9%).

Even though the volume of international agricultural trade is on the increase, the proportion of agriculture within the overall trade of OECD members has shown a decreasing trend since the mid-1980s. For countries like Hungary, New Zealand and Turkey, agricultural export has remained a key area. The percentage of agriculture within aggregate imports has also shown a decline, however, food still comprises a major part in the imports of Japan and several European (mostly EU member) countries. Within the overall imports of Hungary, the import of agricultural products and food remains below that of the OECD average.

As a result of the strong global economy growth as well as low inventory levels, the **world price of agricultural products calculated in USD increased in 2000**, nevertheless, the price of cereals and butter still remained 40–50% below their 1995 level on the world market. The OECD area is characterised by relatively low population growth, therefore in addition to the global supply, international food prices are determined by the demand of non-OECD countries. **Over the long term however, markets change slowly as a result of liberalisation of agricultural product trade.**

The growth of national production in the OECD countries **has shown a higher increase than that of agricultural production**. The **proportion of food industry** within GDP has continuously **declined**, falling below 4% by the 1990s. **The** average **contribution of agriculture to GDP** in the OECD countries **stood at around 2%,** with individual values falling within a wide range: Turkey standing at 14%, Switzerland at 1% (such contribution in Hungary currently stands below 5%). In the majority of the OECD members, **agricultural output** has shown a declining trend since the 1970s. **Income from agricultural activities** was estimated to **have been increased in 2000** compared to previous years, however, with major differences between member states and various sectors.

The agricultural sector represents a small percentage both within the GDP and total employment, at the same time, it plays a rather significant role in the use of natural resources (on the average, nearly 40% of the land and more than 40% of the water resources serve agricultural purposes in the OECD countries, moreover, for the majority of OECD countries, cultivated lands represent more than half of the total land area.) The **average proportion and size of pasture** in the OECD countries has **remained stable** for the past one and a half decades. **Within consumption, the proportion of spending on food has**

further declined. The number of farms in all member states – with the exception of the former socialist countries – has **shrunk** by 10%–30% during the past decade. Accordingly, **average farm size increased** due to mergers between farms. The number of farmers leaving agriculture exceeds that of new entrants. **The increase in labour productivity has been made possible by farm land concentration, larger and more efficient use of labour capital equipment** (including information technology), as well as **by a more economical use of certain inputs** (fertilisers, pesticides).

No major reform took place in the agricultural policies during 2000, however, a multi-year program impacting agricultural subsidies was introduced by the EU (Agenda 2000), and in Australia and Japan. The most important changes occurred in the regulation of cattle-milk production, not unexpectedly, given that this sector is characterised by extraordinary high level of subsidies. In certain countries, the declining income from agriculture was compensated by subsidies. **A large number of subsidies related to natural disasters, animal and plant health, as well as public health issues were applied in 2000, moreover, new agricultural-environmental measures were implemented. Food safety enjoys a high priority,** with several new measures taken in this area.

At the same time, only a limited number of changes occurred in respect of competition policy. With respect to agricultural competition policy, the most important event was a series of meetings at the new WTO round. **For the majority of the OECD countries, WTO commitments had to be fully met in 2000,** which also means that **prior to the closing of the WTO negotiations, only slight multilateral reductions should be expected in domestic and export subsidies or import duties.** As a consequence of WTO commitments, tariff rates have been reduced, and preferential tariff rate quota increased. The total amount of export subsidies fell primarily as a result of the decreasing export subsidies in the EU. **It is a positive sign that during 2000, several bilateral commercial treaties entered into force, part of which covered solely agricultural trade.**

When analysing the level of agricultural subsidies in the OECD member states, the following conclusions can be made.

The **estimated producer support** (% PSE) **declined** in the majority of the OECD member states and for most products, as a result of the shrinking gap between domestic and world market prices. At the same time, the PSE per agricultural producer or per one hectare agricultural land widely varies (in Hungary the amount of subsidy per producer and per one hectare is below that of the OECD average). The **% PSE** shows particularly **great variations across commodities**. With the exception of sugar, beef, wool and pork, subsidies for each of the product reviewed by the OECD decreased. Amongst the various products, generally **sugar and cattle-milk** enjoy the **highest level of support**, whereas **rice** is highly subsidised solely in **Japan and Korea**.

Within the Producer Support Estimate (PSE) in the period under review, **Market Price Support declined** (a similar process was experienced in Hungary). The **8-9% share** of payments based on **input** use has **remained virtually the same** within the PSE. **The subsidy based on input use in Hungary** is a major element within the overall subsidy system, and its proportion within the producer subsidy increased **from 9% to 27%** in the period under review. Payments based on **regulations on input utilisation** (environment friendly production) also **decreased**, and represented **2%** within producer subsidies. The introduction of payments based on **previously obtained entitlements** caused the biggest change in the

structure of subsidies in the majority of the OECD member states (Hungary currently does not apply such subsidies), given that the proportion of such subsidies **increased** within the PSE. Payments based on **farming income** totalled at **only 1%** of total producer subsidies (the same applies to Hungary). Payments based on **area sown and livestock** have declined since 1998, however, between 1998 and 2000 they still amounted to twice as much as the average of the years between 1986 and 1988, i.e. 11% (in Hungary 4%) of total producer subsidies. These type of subsidies play a major role primarily in the EU.

The Nominal Protection Coefficient (NPC) in the OECD region has shown an overall decline, since the prices realised by producers in the period between 1998 and 2000 exceeded world market prices by an average of **46%** as opposed to the 61% in the years between 1986 and 1988. **This means that both import barriers and export subsidies were reduced. At the same time, the Nominal Assistance Coefficient (NAC) declined** from 1.63 to 1.54 (in Hungary from 1.66 to 1.25) in the period under review. Thus, between 1998 and 2000, the combined amount of the production value calculated at domestic prices and that of government subsidies still exceeded the production value calculated at world market prices by **54%**, meaning that the gross sales revenue of farmers exceeded the sum calculated at world market prices by the same amount. **NPC and NAC values for the individual OECD countries and individual products vary within a wide range.**

In line with the decrease in producer subsidies, the additional costs of consumers and taxpayers declined. The estimated average consumer support (CSE in %) for the OECD region for the period between 1998 and 2000 amounted to –28% (vs. –33% for the years 1986 to 1988), i.e. consumers paid this amount of tax to the agricultural sector. **The CSE measured in percentage varies within a wide range within the OECD region.**

The **GSSE, i.e. General Services Support Estimate** (research, specialist training, inspection services, marketing, etc.) increased within the total support granted to the agricultural sector (TSE), and reached 17% in the OECD region (the same applies to Hungary). One third of the general services represented infrastructure support; **subsidies for inventories declined**, while the proportion of **marketing and promotional support** replacing price subsidies **increased**.

However, total subsidies expressed as a percentage of GDP (which is also the TSE in percentage) declined from 2.2% to 1.3%. We must note that the individual TSE of the member states widely vary.

Based on the changes in the PSE/CSE, we believe that the OECD member states have shown an overall improvement in the area of agricultural reforms, even if the situation of individual countries vary to a great extent. PSE/CSE for some countries applying for EU membership, namely the **Czech Republic, Hungary, Poland and Turkey remained below the EU level**, meaning that these countries have witnessed an increase in market-oriented agricultural production. EU subsidies are less and less tied to output and input, which may contribute to efficiency improvement during the enlargement process. The market oriented agricultural policies of Mexico, Canada and the US enhance the agricultural efficiency of the NAFTA countries.

We compared the support level of the Hungarian agricultural sector based on calculations performed in accordance with the new methodology of the OECD.

Total subsidies granted to Hungarian agricultural producers (PSE) increased by 21% between 1998 and 1999, then decreased by 22% between 1999 and 2000. The average **percentage PSE was 20% in Hungary** in the period of 1998 to 2000, remaining **well below the OECD average of 35%.**

Total Support Estimate (i.e. **TSE** as a percentage of GDP) was **2.6% in Hungary**, while the **OECD average** stood at **1.3%** in the period under review. This means that **total agricultural support compared to GDP in Hungary (TSE expressed in percentage) was twice as much as that of the OECD average.** Within total support (TSE), the proportion of PSE is determinant, as the general services support estimate (GSSE) was 17% – both in Hungary and in the OECD countries – in the period under review.

In addition to **government subsidies[2] –** subsidies in the PSE and subsidies in the GSSE within – **the PSE** were also greatly influenced by **Market Price Support (MPS).** The significance of **Market Price Support** is evidenced by the fact that this type of support in Hungary represented **57%** (OECD average being 66%) **within the PSE** in the period under review.

The analysis of the **Hungarian market price subsidies by products** reveals that **milk, eggs and poultry enjoy high Market Price Support**. On the other hand, **Market Price Support to beef cattle remained low. For other meat products a varying level of subsidies exist.** Changes in cereal prices are particularly important as a large scale production can have a significant impact on the level of market price subsidies. In the case of **corn, the Market Price Support was negative**. As for **wheat**, due to a raise in domestic prices an **increase was seen in the Market Price Support**. The earlier positive Market Price Support for **barley** moved to negative Market Price Support. **Sunflower had negative**, **sugar had positive** Market Price Support in the years under review.

The Hungarian **Consumer Support Estimate (CSE)** remained **negative** all through the period under review, i.e. **consumers were subject to a surcharge**. The extent of this amounted to an average **–13% in Hungary,** whereas the **OECD** average stood at **–28%** in the period between 1998 and 2000. **Therefore, the average OECD figure shows a much larger extent of consumer tax than that in Hungary.**

When analysing subsidies on individual product basis, the following facts can be highlighted:

Despite a continuous increase (from –15% to 16%) of support to **wheat**, the PSE **remained below that of the overall agricultural** sector (which was 20%) in the period under review. The continuous increase in the PSE was caused by the increase in market price subsidies. At the same time, the **average OECD PSE was higher** (40-45%). Therefore, **Producer Support Estimate of wheat** can be considered as **low in an international comparison.**

The **CSE of wheat** in 1999 and 2000 indicated an ever growing **negative value** (was changed to –7% from 18% between 1998 and 2000), i.e. **the consumer tax kept growing**. At the same time, the **average OECD** CSE (which ranged between –9% and –16%) indicated that **consumers in the OECD countries subsidised wheat production to a greater extent than in Hungary**.

[2] The sum of government subsidies includes not only subsidies under the scope of the FVM, but also any other kind of subsidies related to agriculture, for example educational, organisational or operational costs.

The **PSE of corn** has shown an increasing trend, although it remained **at a very low level** (within the range of –35% and 1%) in the period under review, i.e. **it was significantly lower than the overall producer support level** of the agricultural sector. The support granted to corn production rose also as a result of a larger relative increase in the Market Price Support. At the same time, the **OECD average for producer support to corn production was higher** (29% to 34%).

The **CSE of corn** declined (from 16% to 3%), at the same time, the whole of the period **was characterised by consumer subsidisation.** The change in the consumer subsidisation was essentially a result of the decrease in the price difference (between the domestic and reference prices). The **OECD average** for **consumer subsidisation to corn** production was **more balanced** (7-9%) as compared to Hungary.

The **percentage PSE** of **barley** declined (from 15% to 3%) between 1998 and 2000, which can be attributed to the decline in the Market Price Support. In the **OECD region** however, the **PSE** of other feeder grain (also including barley) indicated a **much higher** figure (41–53%).

The **CSE of barley was negligible** (between –3% and 1%). At the same time, the OECD average **consumer support – for other feeder grain** – was **comparably low** (between –2% and –7%).

The **PSE of sunflower was low** (ranged between –11% and 1%) in the period under review due to the negative Market Price Support, and fell much below the support level of the overall agricultural sector subsidies. As opposed to this, the average **OECD PSE** of oil-seeds (including sunflower) **was higher** (17% to 25%).

The **CSE** of sunflower has shown a **positive** – but declining – **trend** in the period under review (falling from 21% to 7%), as a result of the relation between domestic and international prices. At the same time, the **OECD average** CSE for oil-seeds (-1%) reflected a **negligible level of consumer subsidisation**.

The **PSE of sugar** has shown a **rather high value** (38% to 56%) though with fluctuations, in the period under review. The **OECD average PSE for sugar** was **even higher** (50% to 61%).

The **CSE** of sugar **was also fluctuating**, however, consumer subsidisation generally has shown a high negative figure (–34% to –51%), i.e. **Hungarian consumers** provided **a considerable support to sugar production** in the period under review **in an international comparison** (the OECD average was in the range of –50 to –63%).

The Hungarian dairy industry enjoyed not only government subsidies, but also a substantial Market Price Support, therefore milk shows a **high** (43% to 53%) **PSE value** in the period under review, **in line with the OECD average**.

The **CSE of milk** (ranging between –38% and –45%) in the period under review was **strongly negative compared to the OECD average**, i.e. **consumers** highly **subsidised milk production**.

In the case of **beef**, the low central budget support resulted in **negative PSE** (ranging between –3% and –15%). The **OECD average PSE** at the same time has shown a **rather**

high value (between 32% and 37%). This means that in the **OECD region** this sector is generally characterised by substantial **producer subsidisation**, as opposed to **Hungary**, where this sector faced **producer surcharge.**

The **CSE** of beef in the period under review has shown a **consumer subsidisation in Hungary** (17% to 27%), while in the **OECD region** a **similar level negative subsidisation was experienced**.

In the case of **mutton**, the PSE was **excessively fluctuating** between 1998 and 2000[3] (ranging between 18% and –26%), while the average producer support value for the **OECD** was **above 40%.** This indicates that the **producer subsidisation of mutton is low by international comparison.**

The **CSE of mutton** in Hungary (with the exception of year 1998) reflected **consumer subsidisation** (28% to 35%), while in the **OECD countries** this value was **negative** (ranging between –13% and –24%), i.e. **consumers were subject to a surcharge.**

The **PSE of pork** widely varies, since due to the increase in government subsidies, in 1998 and 1999 producer subsidisation was **high** (32% and 28% in Hungary, and generally 16% and 32% in the OECD countries, respectively), and at the same time in 2000 the **PSE in Hungary changed to 0%** due to the negative Market Price Support, while in the **OECD** region it remained at an average **22%.**

The CSE of pork in Hungary was moving in the opposite direction compared to the producer support (increased to 10% from –19%). **The same was true for the OECD average CSE** (it ranged between –13% and –30%).

As a result of the balanced Market Price Support, the **high PSE** (32% to 36%) of poultry hardly changed during the years under review. At the same time, the **OECD average** (8% to 18% for poultry) was **well below the Hungarian level** of producer support.

The **CSE** of poultry in the period under review **had a higher negative value in Hungary** (ranging between –23% and –24%) than in the OECD countries (between –4% and –13%), meaning **that by international comparison, the poultry sector was characterised by a larger consumer surcharge.**

The PSE of egg was substantially higher in Hungary (53% to 62%) in the period under review than in the OECD countries (9% to 12%).

The **CSE of hen's egg has shown a higher negative value in Hungary** (-49% to –56%) than in the **OECD** countries (ranging between –5% and –9%). Consequently, in the period under review the consumer surcharge in the **Hungarian poultry industry was higher than the average OECD level**.

As compared to the PSE of the overall agricultural sector, **PSE of sugar, poultry and eggs was higher**, PSE of pork was identical, and PSE of other products were lower in the period from 1998 to 2000.

[3] Note: In 1988 calculations included only the procurement price of sheet for slaughter (i.e. the market price of lamb was not taken into consideration).

This is **in line with the trend in the CSE for the individual products**, as in the period under review, sugar, milk, poultry and egg shows a lower CSE than the CSE for the overall agricultural sector, in other words, a higher than average consumer surcharge.

If we compare the proportion of individual products within central budget subsidies and within the GDP, we find that three products (wheat, milk and pork) enjoy a higher level of subsidisation in percentage of the GDP, whereas the support level of other products remains relatively low.

Agricultural income and the influential factors

by József Alvincz, Katalin Antal, Lajos Harza, Sándor Mészáros, Krisztina Péter, Márta Spitálszky and Tibor Varga

1. For agricultural income-calculations there are four systems available at the Research and Information Institute of Agricultural Economics (RIIAE). (As far as we know even at national level there are no other and/or different systems available). From among these systems particularly the data of the Hungarian Tax and Financial Supervising Office (APEH data) and the data of the Economic Accounts of Agriculture (EAA data) are suitable for approximate calculations of the income – volume of agriculture – as a sector of the national economy. From among the other two data sources of income calculation, the Farm Accountancy Data Network (FADN) is based on the representative survey of agricultural holdings, while the database of costs and incomes by enterprises provides information on the economic position of agricultural products. However, the income surveys neither of the APEH nor of the EAA are of full scale. The previous includes first of all those associations, which keep double-entry bookkeeping, while the latter one does not cover the non-agricultural activities – and their impacts on agriculture – of small-scale agricultural holdings which are not subject to taxation.

   The two systems of income – calculation are different in type – and, therefore, the contents of the income calculated are also different.

2. Based on the APEH and EAA data of the last four years and by considering the agricultural income volume and the profitability, the year 1999 can be considered the most favourable one for agriculture. That time profitability proportional to production value calculated by the two systems below was -0.9% and 3.3%. By analysing the associations included in FADN the same value was even worse, i.e., 1.8%.

   The change of income-volume as a function of time varying also by the legal forms of the holdings was influenced by the change of the material costs. Based on the FADN data the income position of individual entrepreneur farmers and of large-scale associations was more favourable.

3. The development of the main factors of agricultural incomes was determined by index calculations based on the data of the APEH and EAA.

   In both systems the income-decrease reached its top value in 1999, therefore, this was the year to which the data of 1997 and 1998 were compared.

   Based on the APEH data the profit before tax of 23 billion HUF in 1997 turned into a loss of 8 billion HUF. This profit drop was due to the increasing costs exceeding the increase of the incomes by 31 billion HUF. Only about one third of the income increase originates from the increasing prices, two third was generated by the by the volume increase. As for the cost the situation is just the opposite. From the input increase of 144 billion HUF, 90 billion HUF was generated by the increasing inputs and only 54 billion HUF originates from the increase of the quantity. These numbers give evidence, on one hand, to the increasing gap between the relative prices of agricultural and industrial products, and on the other hand, to the improvement of the physical efficiency. (Against to the increase of the terms of trade of 5.6% the integrated indicator of efficiency improved by 2%.) The improvement of efficiency would be even more favourable if the profitability of industrial activities were not reduced by the financial transactions.

By taking into account the reference year of 1998 the situation is similar to the previous year, however, the incomes and costs have moderate been increased and in this process the impact of prices is dominant. By comparing these two years with each other the improving efficiency of industrial activities decreased due to financial transactions.

By analysing the APEH data the results can be summarised as follows: the agricultural sector is capable to increase its efficiency but is not able to break through the financial constraints. This is manifested, on one hand, in the increasing gap between the relative prices of agricultural and industrial products and, on the other hand, in the losses of the financial activities.

Based on the EAA data – which is another method of income calculation – considering the changes of income-volume the tendency was also unfavourable.

The results obtained by applying calculated indices correspond mainly to the results calculated from the APEH data. The terms of trade – ratio between the relative prices of agricultural and industrial products – is higher than those obtained by the APEH data. This is probably due to the higher flexibility of input prices of individual entrepreneur farmers. However, this might also be due to the differences of the various databases.
Income forecasts for 2000 can only be prepared by the EAA. According to these forecasts the prospects for last year were more favourable than for 1999.

4. In order to be able to judge more realistically the income situation of the Hungarian agriculture our aim is to analyse the two large agricultural systems of the world, that is, of the EU and the US. Due to the delayed publication of the EU data our research could only cover the agriculture of the US, however, the results obtained –which will be summarised in the following - are worth considering.

   Profitability of agriculture in the US is very high and well balanced. The profitability proportional to revenue– which is in Hungary 1-2%, but sometimes even a negative value – in the US was between 20-25% in the nineties. Based on the data this high level of profitability could be ensured by providing subsidies for the producers.

   Based on the data available – i.e., that of 1999 – 47% of the net revenue originated from governmental support. However, form 1996 on the income ’produced” in agriculture was gradually decreasing. The reason of this was not only the slowly decreasing price level of production but also the increasing input prices, that is, the increasing gap between the relative prices of agricultural and industrial products (terms of trade).

   The reciprocal values of the indices of the terms of trade were from 1990 on almost the same in the USA and Hungary. Due to this the income positions of the agricultural product in both countries were unfavourable. The US has counterbalanced this situation by providing increased subsidies. This solution would also be required in Hungary. However, chances for this are very slight due to the limited resources of the central budget.

5. There is a close relationship between the incomes generated in agriculture and the subsidies provided as we have already mentioned in the previous paragraph about the comparison of last years’ agricultural incomes in the US and Hungary. In Hungary the decision makers of the sector often raised mainly the question whether subsidies provided had any impact on agriculture and the various sectors. For providing an exact answer for this question we have applied **regression functions**. In order to identify the subsidies the FADN database of RIIAE was applied.

6. The majority of the professionals of the field think that the unfavourable situation of agricultural incomes can be explained by the sector's unbalanced relationship to the central budget. This means that there is no balance between the subsidies received and payments paid by the sector. During the years analysed – i.e., 1994, 1998 and 1999 these relationships to the central budget of the agricultural and food sector were in each year positive. Therefore, the unfavourable income situation of agriculture cannot be explained basically by the development of these budgetary relationships but by the change of the input and output prices, which is an unfavourable tendency for agriculture.

7. For selecting the appropriate method to analyse the effects of subsidies we have applied a theoretical approach, for which **subsidies are to be considered as part of the inputs**. Based on this, the additional input leads to a change in the revenue (in most cases this is an increase) to be accessed in the form of post-financing.

   By considering the function of the subsidies used by the holdings included in the FADN – with the exception of the subsidies granted for market access and investments, which are not to be taken into account - can be considered as income compensatory payments. However, the terms of the awarding require that the subsidies should be used for the production (inputs have to be certified by invoices and the use of manure by the village managers). Therefore, this type of subsidy can be considered a compensatory payment devalued in the net revenue of market sales. The market price contains the uncertainty and adds this uncertainty to the measurement of the impact of the subsidies. This justifies the application of **regression estimations** based on probability. This is the reason why we calculate the impact of the inputs with the subsidies on the net sales revenue, and then the impact of the same input without the subsidies. The difference between the two impacts can be considered as the result of the subsidy.

8. Based on the above we can see that there is a significant conceptual difference between the impact analyses calculated by analysing the indicators of profitability of a budgetary aspect and those calculated by regression estimation of sales aspect. In the previous it is provided that in the revenue the share of the inputs is proportional to the costs while in the latter **the share of inputs can be determined by the extent of its following the development of the profit**. The impact of an input of a smaller scale on the revenue can also be stronger than that of an input of larger scale if the scattering of the rate of the revenue and input by holdings is smaller.

9. The factors influencing the revenue were categorised into four groups. These are **the dead labour inputs, live labour inputs**, the **value of land** and the **separated input** originating from the previous three categories.

10. The calculations were made in two versions. In the first one the **economic content** of the inputs were emphasized. For this aim we included in the labour input the job work; the own labour estimated, the value of the land, the land lease and the estimated value of the own land are also included. In the results this version is contained in the column of E-H. The other version might be considered an **accountancy-type** calculation; where the inputs defined as costs by accountancy are included in one group; such as the land lease and the fees. The own labour and the value of own land – which cannot be accounted as costs– are taken into account as other inputs. The results obtained are included in column "S". The previous **value-based version** including the effective inputs is more realistic than the latter, which can be considered a **monetary** version.

11. We have performed these calculations also by the legal forms of the holdings. For these calculations in addition to the "national" categories including all kinds of associations we considered the **individual producers, the individual entrepreneur farmers, the associations and the cooperatives**.

12. For determining the extent of the impact of the subsidies we apply the **indicator of marginal productivity-type**, which due to the lacking reference revenue could be calculated by applying the production flexibilities. In fact the indicators applied cannot be considered a real **indicator of marginal productivity-type** since the impact on revenue of inputs containing the subsidies have not to be determined by the other influential factors remaining unchanged. By calculating the regression factors without the subsidies we have, however, decreased the value of the other influential factors – corresponding to the extent of the correction factor of the other influential factors. We think **that by decreasing proportionally the influential factors** adds a smaller uncertainty to the model than the method based on partial differentials generally accepted for marginal productivity calculations. The extension of the method - generally applied for proportional costs - to the total costs is a more realistic simplification than to decrease one factor of the production – containing also the subsidies - by the subsidy and leaving the others unchanged.

13. The farms provided by subsidies can schematically be classified into four groups by considering the relationships of revenues and the inputs with subsidies and based on the specific yields (per hectares):

    - Low inputs, high profit: eligibility for compensatory production subsidy,
    - High inputs, high profit: eligibility for efficiency improving production subsidy
    - High input, low profit: eligibility for social support
    - Low inputs, high profit: eligibility for subsidies.

    An agricultural policy decision is required for providing compensatory production subsidy from production or social resources. The indicator can show whether the subsidies provided for a definite product during the period analysed (year) resulted in efficiency improvement (positive values) or income compensation (negative values).
    Based on the above logic – although comparative analyses supported also by alternative calculations are not yet available – **the subsidies in total** have an **income compensatory role** even if this is only of small scale. This refers to all kinds of legal forms. The aerial-based subsidies - established with the objective of income compensation – resulted in moderate efficiency improvement. The subsidies provided for market-access were, although only modestly, but income compensatory.

    Our opinion is, however, that long-extending consequences cannot be drawn from the above due to several reasons. On one had the methodology of the impact analyses of subsidies needs further improvement. As for the future we think it would be important to get a clear picture on the revenue and/or income-influential role of those subsidies that have long-lasting impact on the performance of a given sector. By considering these latter the development subsidies (such as investment and biological resource improvement subsidies) have a special role. The fact that subsidies are provided only of small scale might explain their moderate impact. We can also say that the "critical volume" of the subsidies – over which they could also have an effect on incomes – was not reached yet.

14. Financing of agriculture in total can only be carried out from loans provided together with government support connected to interest subsidy. Only large enterprises with capital resources can make use of the loans. On 31 December 2000 the total of agricultural loans in Hungary was 280093 HUF.

    The **sectorial distribution** of loans was as follows: the share of **individual producers** was **2.8%** and their total share together with individual **entrepreneur farmers** was not more than **10%.** Almost 90% of subsidised loans were provided for **cooperatives** and **associations**. By taking into account the two sectors' similar share in land use (fifty-fifty per cent) the facts might also be interpreted as a critic of the subsidy policy of the past and of the present (The FADN data of RIIAE can also support this opinion. In the case of individual entrepreneur farmers the share of own capital within the value of the assets projected to 1 hectare is 87.7%, while the same for associations was 54.7%).

15. The present agricultural loan system is basically uniform, however, there are some differences between the banks. For the banks- the majority of which are already in foreign ownership – the individual entrepreneur farmers without the required collateral are risky clients (It is a generally used expression that the bank – and not only in connection with the agriculture – is a "dangerous factory"). On the other hand, financial institutions are not interested in dealing with small loans characteristic in general for individual entrepreneur farmers. Therefore, we think it would be required to designate a bank - in majority in state ownership - which would be supposed to deal with the financial subsidies to be provided for strengthening the family farms.

    For the financial institutions it would be more favourable if the loans connected to interest subsidy were provided with state guarantee. For counterbalancing this interest subsidy will have to be decreased. However, this way loans with lower interests (12-13%) could also be accessible for the producers.
    The subsidy policy is criticised by the financial institutions because the loan system is changed annually. Their opinion is that the loan constructions should be in effect for 4-5 years so as to make producers able to plan.

    Another important problem of the system is that the interest subsidy and thus also the loans – lead to the indebtedness of the producers.

16. In the EU there is no general system for agricultural loans. In the Member States three main models can be found: loans are granted mainly by **cooperative banks** (such agricultural banks can be found in Germany, in the Netherlands, in France and in Sweden), by **commercial banks** (for example, in the UK) and the third one is the **American model**, where there are several groups specialised for agricultural loans.

17. For solving the problems of agricultural financing there are several opportunities. The practices applied in the Member States of the EU can be used as examples; however, a system that could be fully adopted cannot be found. The lacking financing and especially the lacking financial institutional background is a problem for all the agriculture, however, this hits mainly those who are producing in small volume. Therefore, a financial institutional background would be required which is adapted to the special characteristics and requirements of these producers. A solution could be provided by establishing credit cooperatives or specialised agricultural credit institutions. In addition to these the general terms of financing including also the state guarantee system the loans also of the commercial banks could become for favourable for the agricultural producers.

The situation of agricultural loans could be improved by increasing the number of credit guarantee programmes, developing the institutional background of public warehousing, establishing the mortgage system and by introducing the credit guarantee system in a wider scale.

The development of the Hungarian bank system, the decrease of the centralisation that is, decentralisation to a certain extent, and the extension of the rural financial network could be implemented in **several directions**:

- by increasing the density of the rural branches of the banks, the services offered by the commercial banks and by extending the autonomy of the regional money market levels.
- by establishing regional communal financial institutions.
- by establishing the regional system of the Hungarian Development Bank and
- by strengthening the integrated system of the Saving Cooperatives.

Only a network of financial institutions located in the given region may ensure the sound "loan-recycling" and this way it would also be possible to prevent the flow-out of the capital accumulated in the economy of the given region.

Situation of the Hungarian honeybee-keeping sector and the opportunities for development

by Levente Nyárs

The goal of our study is to analyse the Hungarian honeybee-keeping sector regarding the export-import, the technological level, the cost and income relationships and the implications of the EU accession. The research method was based on the international and national literature of the field and on the analysis of statistical data. The **use of the honeybee-keeping sector** is multiple; therefore, the sector can only be described by an integrated approach.

1. The honey production of the world is becoming more and more **concentrated**. Not only the **price competition** but also the production and the trade of the special honey products influence the market. The **traditions, the natural and economic conditions** in the large honey producing countries (China, the CIS countries, USA, EU, Argentina and Mexico) reflect wide variations. By increasing the competitiveness more and more emphasis is laid on cost reduction, standardisation and intensive production. The characteristics of concentration can also be found in this sector since parallel by increasing the number of bee colonies the number of honeybee keeping farms is decreasing. In certain countries (USA, Canada, Mexico) the **demand** for pollination with honeybees is increasing. The participants of the sector have to meet also the **customers' demand;** this concerns mainly for those honey products that originate from **GMO crop production**. The honeybee species and their treatments determine mainly the honey production.

2. Following the **EU** China is the second largest honey producing country of the world, however, its self-supply is particularly low, altogether 47%. The most important export market of Hungary is the European Union; therefore, we should be informed on its market developments and market positions. The households consume 85 % of the honey produced in the European Union and industrial processors use the remaining 15 %. The producers sell directly to the customers and retailers more than 50% of the total honey production. In the EU Member States honey consumption has a special tradition and culture, therefore, customers prefer the more expensive domestic honey to the cheap import honey. The situation is, however, contradictory since the EU can only satisfy the domestic demand by a high import volume, that is, by 130-150 thousand tons annually. During the period of 1994-1999 the competition strengthened between the three main honey suppliers of the EU (China, Argentina, Mexico).

   There is also a hard competition for markets among the small-scale suppliers (Hungary, Romania, Bulgaria). Romania's market share in Germany increased from 1.2% in 1994 to 5.8% in 1999 while during the same period the market share of Hungary decreased from 4.8% to 2.7%. In the dynamic increase of Romania's honey export the **foreign companies with large capitals** played a significant role by **supporting producers with current assets** and operating **on site quality assurance systems**. The situation became more difficult as since 1 January 2001 Romania, Bulgaria and the Czech Republic may export honey to EU markets with zero in-quota tariffs. During the trade negotiations with the EU Hungary could „only" achieve a (10,38%) tariff cut which – based on the data of the first six months –did not have an unfavourable impact on the Hungarian

honey export. In addition to the competitors mentioned above Mexico was allocated a quota of 30 thousand metric tons with a 50% MFN (Most Favoured Nation) bound rates. This situation threatens Hungary's market position severely since the Mexican honey regarding its price and quality is more competitive than the Hungarian honey.

3. Concerning the quantity Hungary cannot compete with the large honey exporting countries, therefore, Hungary has to penetrate the EU honey markets with highly processed and branded products. In the EU Member States there are purchasing, packaging and marketing co-operatives in the honey sector. It is important for Hungary as well, because an export price increase is not possible with a **bulk product.** At present it is the interest of the Hungarian honey processors and commercial companies to package and export the honey in barrels. The low producer prices do not favour the producers and the retailers transfer the price reductions to the producers

4. In Hungary 90% of the honey production is for human consumption and based on the estimations the rest 5-5% of the honey production is used by the industry (baking industry, sweets industry, pharmaceutical industry and cosmetics) and social programmes. As for the **sales of honey** there are several marketing channels. The wholesalers purchase 10-13 thousand metric tons of honey from the producers each year depending on the fluctuation of the honey production; that is, the most significant part of the total production annually. The nominal capacity of the Hungarian honey processing plants is about 40 thousand metric tons, which is double of the highest production level of the last ten years. Most of the commercial companies (all the large ones) operate their own honey processing plants. This is the reason why the capacities of honey processing exceed the level of production at present in Hungary.

5. The **production potentials** could make it possible to collect 40-46 thousand metric tons of honey and this quantity could also be processed by the present **processing capacity**. The costs-income analyses do not justify the exploitation of the Acacia forests. The use of the production potential is limited by the dominance of horizontal hives with frames, which are labour intensive and cannot be mechanised. Up to the EU accession the most important task of the sector is the modernisation of the honeybee keeping equipment since subsidies for such technological improvements are available only to a limited level in the support programs of the EU.

6. In the **cost-income** calculations the difficulty is caused by the low representative samples of the data available and this is the reason why conclusions referring to the whole sector cannot be drawn. Consequently, these data are only for your information. For the analyses static models are applied. Calculations were made in two different categories. In the category of horizontal hives with frames the calculations refer to honeybee keeping farms with 50, 100, 150, 200 bee colonies while in the category of hives with supers (boxes) honeybee keeping with 200, 400, 600, 800, 1000 colonies was referred to. Yields were determined by categories. **Real incomes were generated** at honeybee keeping farms provided with hives with supers (boxes). Larger stocks with higher yield resulted in higher profitability indicators; however, the high risks of large yields (**risks of animal health**) cannot be ignored.

   The **production structure** and the specific indicators of the honeybee keeping by stock size do not reflect the real situation. The participants of the sector are mainly small-scale producers and due to the special tax allowances the ownership of bee colonies is distributed among the family members. In spite of this it can be seen that the number of

bee colonies increased by one and a half (1.5 times) during the last years. Concentration due to economic reasons will be increased in the future, which has also to be encouraged by the regulations and support system.

7. The **regulation system** of the Hungarian honeybee keeping is harmonized with the EU regulations; concerning in particular, the **animal health and the food hygiene legislation**. After the EU accession the present Hungarian market order will be replaced by the market orders of the EU Member States. The harmonisation process requires national programmes with accurate data register system. The **national programmes** have to include both the current and fixed costs. If the sector will not be prepared for the EU accession the Hungarian honeybee keepers will not be eligible for the EU subsidies. The interest groups and professional bodies together with the participants involved in honey production will have to prepare jointly their annual work plan based on the requirements defined by the regulation. The national development plans and the measures have to contain also plans for monitoring the implementation and for the evaluation since the use of the financial resources from the EU budget is strictly regulated. The needed information on the sector was not provided for the preparation of EU accession since the data of the Honey Produce Council and that of the Central Statistical Office did not correspond to each other. At present there are only estimates concerning the **marketing channels** used by the producers for sales (direct sales to consumers, wholesaler, and retailers, sales to the industry).

8. Honeybee keeping is an integrated agricultural activity. In addition to the honey production the **pollination** by bees is also significant (**positive (impact) externality**). It has to be acknowledged also in Hungary that pollination is considered as a significant part of the technology and due to this crop production and horticulture are supposed to pay for this service. In the USA and Canada these activities are done by contracts.

   With the help of the present bee colonies pollination can safely be carried out throughout the country. In comparisons with the European average and taking into account the local characteristics - especially the density of the insects – it can be stated that the increase of the bee colonies is not yet justified by the safety of the pollination but in the future due to the decreasing level of background insect density in the intensive horticulture **demand for bee pollination might be increased.**

   The development of the sector could be encouraged by establishing **service organisations** and penetrating both the export and the domestic markets with branded products with quality assurance certifications in consum-friendly packages produced by producer's organisations and since bee keeping farms with less than 100 bee colonies cannot be **competitive on the market**. In order to remain on the markets their cooperation is indispensable.