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INDUSTRIAL POLICIES IN AGRARIAN ECONOMY

Industrijske politike u agroprivredi

Abstract

Industrial policy is a significant element of successful agro-economic development considering that it integrates three highly important elements of development and growth – economy of scale, innovativeness and synergy – at a global level. As a complex and comprehensive activity it is oriented, by its nature, to structural regulation and promotion of competitiveness of the industry. Serbia does not have a clearly and consistently developed industrial policy, nor does it implement it in an effective manner. As such, it becomes a “receptor” of industrial policies of others – developed countries. However, it could be said that, even with such an orientation, it is not very successful. Hence, this paper treats the global industrial policies issues, as well as policies of the successful countries such as China, USA, EU, and others whose experience Serbia could use as a paradigm. Furthermore, the paper comments the industrial policies of the countries of East Asia and countries in transition, as examples of a positive experience. Finally, it analyzes the situation in the industrial policy segment in Serbia within a historical context, indicates the constraints and offers the possible directions for their relativization.

Key words: *industrial policies, agrarian economy, imperialism, mercantilism, Lisbon Strategy, Republic of Serbia.*

Sažetak

Industrijska politika predstavlja bitan elemenat uspešnog agroprivrednog razvoja, s obzirom na to da u sebi objedinjuje tri veoma važna elementa razvoja i rasta – ekonomiju obima, inovativnost i sinergiju, i to na globalnom nivou. Ona je kao kompleksna i sveobuhvatna aktivnost po svojoj prirodi usmerena na strukturno regulisanje i podsticanje konkurentnosti industrije. Srbija nema jasno i konzistentno izgrađenu industrijsku politiku, niti je primenjuje na način koji bi joj tako nešto obezbeđivao. To je kao takvu čini receptorom za industrijske politike drugih – razvijenih zemalja. Međutim, može se reći da ni u takvoj orijentaciji ona ne ostvaruje mnogo uspeha.

Zbog toga se ovaj rad bavi globalnim pitanjima industrijskih politika, kao i politikama uspešnih kao što su Kina, SAD, EU i drugi čija iskustva mogu poslužiti Srbiji kao paradigma. Takođe, u radu se komentarišu industrijske politike zemalja istočne Azije i zemalja u tranziciji kao pozitivno iskustvo. Konačno, analizira se i stanje na segmentu industrijskih politika u Srbiji u istorijskom kontekstu, ukazuje na ograničenja i nude mogući pravci za njihovo relativiziranje.

Ključne reči: *industrijske politike, agrarna privreda, imperijalizam, merkantilizam, Lisabonska strategija, Republika Srbija.*

Industrial imperialism – neomercantilism in action

The process of deindustrialization of developed countries¹ began in late seventies of the twentieth century induced by the end of the several decades long negotiations within GATT on the liberalization of world trade and creation of WTO. As a consequence, after admission to WTO in 2001, a new hegemonic tendency emerged, contained in the economic imperialism of China as a totalitarian regime². Since then the current world economic struggle

- 1 The basis of the industrial policies of developed countries at that time is the orientation to move the capital of production companies to less industrialized countries at the time which availed of low-cost resources (labor and natural resources).
- 2 China disposing at this moment with major economic resources, namely, population, the most developed trade in the world, GDP similar to USA, has become the strongest financial power in the world that also represents a technological and military force, diplomatic world power, etc. (for more see in Brunet, A., Guichard, P. J., 2011).

is often related to the clash between imperialism on the rise and the current imperialism that has been associated till now with USA³ and somewhat earlier with England. Namely, these countries have ruled the world for over two hundred years now creating the so-called democratic capitalism which is based, above all, on mercantilistic model, as interpreted back by William Petti⁴, and which held the position on the surplus of foreign trade based on manufacturing activities and their products. On the subject of agro-economy, it is necessary to point out that protectionist measures were resorted to, as a rule, during the process of its development⁵. This particularly applied to the circumstances where agro-economy made half of the economic activities of the country, or even more, and where the sudden slump of prices, under the circumstances of opening up to external competition, would be fatal.

The question is raised as to the role of mercantilism in the industrial policies issues. Its characteristics are mostly related to trade surplus resulting from the implementation of powerful protectionism (high customs duties, taxes, manipulation of exchange rate, and depreciation of own currency) or as stated by some, by military means (opening the market with “canon balls” which was the specific approach applied to China during the period 1820-1945). Theoretically speaking, such an approach enabled a classification of countries into mercantilistic and deficit countries, namely, creditor and debtor countries⁶. Therefore, it is a fact that such an approach assigns different positions to individual countries. Hence the advantages and constraints in creating and managing respective industrial policies in different economic segments. The mercantilist

policy (realized either by loyal or disloyal means) leads to absolute advantage of a specific country providing continuous surplus in international economic relations and thereby broader basis for further more successful and efficient industrial development and internationalization – globalization of own activities. On the other hand, the strategy of external debts and discouraging internal savings – stimulating the demand, imperatively causes the drop of interest rates, which in the long run leads to market inflation of assets (real estate and at the exchange) which can push the economy into recession considering that such a state, in view of its external deficit, is unable to successfully implement the monetary and budget policy.

Guided by such approach, through a series of activities of newer date, adopting the lessons from the World Model of Development and using the open clash between USA and Japan (1985-1995), China was able to impose itself as a competition to Japan which suited USA at the time. Clinton’s administration deferred and China was accepted to WTO without raising at the time any conditions regarding the Yuan exchange rate. As a consequence, China was developing a growing surplus, first of all with USA because of the fact that was enormously important to the US companies that had opened their *joint venture* branches in China and the possibility of subcontracting works, which employed enormous Chinese labor. When the fact of devaluation of Yuan in 1997 is added to this, which caused the so-called “Asian Crisis”, which in turn suited the US capital, it can be concluded that China, similar to Japan from the period 1945-1985, conducting the policy of undervaluation of foreign exchange rate, low interest rates, low wages, and raising obstacles to the penetration of foreign capital, succeeded in becoming a new industrial imperialist power, owing to the very fact of implementation of mercantilistic measures. The formula of conducting industrialization policies on a global world scale was verified once again.

Industrial policies of developed countries

Industrial policy (IP) of developed countries is focused, first of all, on creating conditions for achieving goals and tasks of industrialization and, specifically, on promoting

3 The four centuries of European domination over the world ended on the eve of World War I (1914) although England still dominated at the time (more in Kennedy, P., 1988).

4 Points out the significant role of the state in the trade with distant countries, importance of military power on one side and industry on the other, and finally, importance of surplus in foreign trade. William Petty (1671) *L'Aritmétique Politique*, London (see more in Furquet, François, 1989).

5 Back in the 1930s, USA is prominent on the world stage by its aggressive protectionism (Smut-Houli ultra protectionistic tariffs) which was a significant instrument of its industrial policy by which it protected its young industries, particularly agrarian economy.

6 Two coefficients are singled out in that respect – internal consumption modulation coefficient and foreign trade balance coefficient. Four categories of countries can be singled out in that respect (“+ +”, “+ -”, “- +”, “- -”), although, generally speaking, practically two of the types could be singled out (more in Brunet, A., Guichard, P. J., 2011).

industrial growth and efficiency. It is very important here that the main goals of industrial policy are compatible with other economic development goals. It must contribute to the general economic growth, financial stability, improvement of balance of payments position, full employment, and improvement of prosperity.

The industrial policy, within the economic policy, can have a so-called positive and negative approach. The positive approach pertains to stimulation of new industries or new products and processes, and the negative approach to abandoning outdated resources and technologies in individual productions. In reality, there are such industrial sectors on a decline that seek additional support from the state to aid them in procuring new equipment and maintaining employment. In such situations, the industrial policy in practice is related to numerous segments of economic policy.

The realization of industrial policy objectives is greatly dependant on whether the instruments actually work in practice. Furthermore, it is important that the instruments and procedures are not too complicated so that their use by the companies could be easy to manage and their implementation would not cause major additional costs.

Therefore, it can be concluded that establishing and carrying out the goals of industrial policy is a highly complex task which implies numerous actions taken in numerous segments. Coordination and integration of a great number of various institutions and organizations are highly important, but also optimum establishing of measures of economic policy. The industrial policies of developed countries can be taken as paradigm, above all those of the EU and countries of East Asia.

Industrial policies of the EU before and after the Lisbon Strategy

Industrial policy of the European Union was understood in the past as a set of activities of the countries that have set a goal of achieving industrial changes by incentives that promote production of specific industries or stimulate entering and exiting a market with specific industrial products. However, the high barriers to entering an integrated Union market, externalizing between the companies and markets of the member countries, imperfection of the

capital and labor market, high costs of structural adapting of the industry and other affecting factors, have led to the appearance of intervention at the European Union level instead of at the national levels.

The industrial policy in the Union was developing in phases, from sector protectionism to horizontal support and clear promotion of competitiveness, i.e. from passive to active policy. As EEC was shifting from the negative (passive IP) to positive (active IP) integration, the importance of supra-national IP grew. Nevertheless, the constitutional problems were continuously present, conflict of interest and ideologies among the members, fear of supra-nationality (large members) and lack of resources. Four periods may be singled out in the constitution and conducting of IP in the EU in spite of the fact that the economic literature is not on the same line and is imprecise: 1) period from Marshall's plan to creation of EEC (1947-1960); 2) period of accelerated growth to the oil shocks (1960-1973); 3) post crisis period (1973-2000), and 4) period after 2000, i.e. period after the Lisbon Strategy. It is important to emphasize for this occasion the newer EU experience.

Since the "Maastricht Treaty", IP in the EU is based on Article 157, Chapter XVI-Industry. The chapter "Industry" is a codification of "IP Directives", whereby EU competencies related to IP were officially entered. In order to resolve these problems a White Paper on Growth, Competitiveness and Employment was passed in 1993, which was harmonized with the Directives from 1990. The White Paper was followed by a whole series of important documents and directives which became the basis of horizontal IP concept. It is obvious that EU IP since 1990 has made a major turn from sector policy to a clear promotion of competitiveness. The IP targets the realization of which was aimed at during the 1990s were: (1) support to retraining of labor; (2) trans-border mobility and exchange; (3) promotion of entrepreneurial capital market and investment in human resources; (4) subsidies for positive external effects (technological research), and (5) providing a stable macroeconomic environment and access to foreign markets on a reciprocity basis. Therefore, the common and integrated IP at Union level in the course of the 1990s, but also after the adoption of the Lisbon Strategy, was government intervention oriented

to: (1) external market (trade policy); (2) domestic market (competition policy); (3) factoring markets (on the capital and labor markets); and (4) three additional independent components of IP (policy of regional development, policy of technology, and development of framework conditions for industry or business environment).

The world globalization trends, economic and political domination of USA, high competitiveness of the Japanese industry, as well as China's developing into a new economic power, are the most significant reasons for the new IP approach in the EU. It began after the Lisbon Summit of the European Council in 2000.

According to LS, the strengthening of EU competitiveness and its potential for the industrial growth is based on seven of the total of 12 targets: (1) broader and more efficient use of new information technologies (IT) and creation of European area for research and innovations; (2) completion of developing a unique internal EU market; (3) creation of efficient and related financial markets; (4) strengthening of entrepreneurship by improvement and simplifying of regulatory environment (particularly for SMEs); (5) better social cohesion founded on promotion of employment; (6) improving skills and improving the social protection system; (7) sustainable development that would ensure a long-term quality of living. Related to this, the Action Plan included four areas of activities: (1) process of coordination and creating key technologies that would gather numerous protagonists and implement a common strategy for development and use of these technologies in EU; (2) greater investment of industry in research and linking research and industry; (3) increasing public financial subsidies for research; (4) improving the environment for research and innovations in the EU through protection of intellectual property, regulation of products market and related standards.

Integration of new members in LS began at the session of the European Council in Goeteburg 2001. The new countries achieved a high level of macroeconomic stability and made an important step in the direction of market opening and modernizing of institutional, legal, administrative environment and privatization which contributed to their significant industrial restructuring. With respect to the Lisbon targets these states adopted

the "Europe Plus Strategy" and thus took part in the European strategy of employment and raising of social cohesion. The achieved LS results indicated to the EU that the framework of changes and responsibility for their achievement must be decentralized. This meant the division of responsibilities among certain member countries that were bound to prepare their national annual programs of reforms within the basic LS concept. The common framework of the "Revised (New) Lisbon Strategy" retained the focus on targets significant for the entire developmental and strategic EU position. The EU introduced the "Corporate Social Responsibility" (CSR) as a key dimension in reviving LS in its document from 2006 titled "Implementing the Partnership for Growth and Jobs: Making Europe a Pole of Excellence on CSR".

The Union confirmed the importance of integrated guidelines, and emphasized as priorities in the "Community Lisbon Program 2008-2010" [2]: a) the need for stronger investment in knowledge and innovations, b) unblocking and strengthening the business potentials, particularly that in the SMEs, c) greater level of adapting the labor market, based on concept of flexibility, and d) importance of energy and climate changes.

Under the circumstances of growing globalization and a more pronounced international competition, the EU presented in 2005 a new and integrated IP, whose aim was creating a better climate for the development of all segments of industry. Particular attention was devoted to establishing better framework conditions for the processing industry, as the basis of economic growth in the EU. It underwent specific changes and was met with great challenges and a favorable business environment was required for its further development and success. This was preceded by a multifaceted and comprehensive analysis of each individual segment in order to define the potentials and problems.

The new IP contains a set of proposals and main initiatives for IP, with emphasis on initiatives that may lead to raising its efficiency. 1) Improvement of regulatory environment – industrial companies must be subject to a set of technical rules pertaining to security, health, environment and consumer protection. 2) Raising the innovative role of SME – geared towards strengthening the role of European

SMEs, whose dynamism and level of survival are lower than in USA. 3) Financing of Community – EU projects through a predominantly horizontal approach the IP plans to take part in financing the industrial projects (trans-European network) and long-term research programs whose goal is European public interest harmonized with industry. 4) Support to structural harmonization – EU plans to promote restructuring and use of structural funds in order to ensure industrial competitiveness and attractiveness of the region that is falling behind. 5) Creating work groups – in order to promote IP EU plans to create work groups that will link all industrial branches. 6) Financial prospects – launching of a new IP in the EU needs to be supported also by the finances and costs segment.

The situation was somewhat more complicated for the European Union in the past regarding IP and existence of conditions for its coordination at Union level. But, as the Union moved to a positive integration, the importance of coordinated supra-nationality of IP grew. Nevertheless, there were constitutional problems, conflict of interests and ideologies among the members, fear of supra-nationality, particularly of large member countries and insufficiency of resources. However, creation of a common European Union IP was a key element for the successful economic development and highly important for the achievement of competitiveness of industrial products and services, both on the integral internal market, as well as competitiveness towards the main foreign trade partners. But, the relatively slow implementation of the “Lisbon Strategy” targets demanded from the member countries to subject it to revision. Therefore, the new IP is geared towards achieving other more relevant forms of economic policy, by integrating different dimensions of IP, in order to exert a stronger impact on raising the competitiveness of industry as the main target.

Industrial policy in the countries of East Asia

The countries of East and South-East Asia have exhibited the greatest growth after 1960. By 1980 East Asia became the new industrial center of the world economy. Their rapid growth took place under the conditions of significant structural changes of their economics, with a growing share in industrial production sector (more than 1/4 GDP

is created within industrial production). The industrial production was promoted with success from a simple work intensive to intensive. The restructuring process of the East Asian NIEs was extremely successful, and some twenty years since their takeoff, these countries were ranked already among the first ten countries of the so-called “World Innovators Club”. In late eighties of the 20th century, numerous Korean and Taiwanese companies became equal partners with the US, European and Japanese multinational companies in development of their new technologies. The successful development of the East Asian countries is characterized by very high growth rates, and related to this, significant improvement of the standard of living. There is a pronounced increase of income per capita, its more uniform distribution, and the social development indicators (e.g. infant mortality rate, anticipated lifetime and adult literacy rate) began to approach that of the developed world. It can be concluded that the industrial policy of the East Asian NIE is one of the most important elements of their successful development process.

The World Bank study on the “East Asian Miracle” holds that three elements are important for their development: (1) macroeconomic stability, (2) selective openness and (3) investment in human resources. In spite of certain differences that existed in the implementation of industrial policy by certain East Asian countries, it is possible to notice some common traits. For example, the governments of these countries had taken over, to different degrees, the leadership in the process of structural transformation. They identified and supported those sectors in which they had forecast the greatest potential for growth and where they expected significant spill-over effects. The governments of the East Asian countries had strong influence on stimulating the industrialization process in four main directions: trade policy, competitiveness policy, financial sector interventions and finally, through state companies.

Industrial policies in the countries in transition

The transition process began after the fall of the Berlin Wall and disintegration of the socialist social system in Europe. All the newly created countries, the so-called “countries in transition”, had only one goal – to join the

European Union as soon as possible. In order to achieve this they had to fulfill certain conditions for accession. The industrial policy of the European Union is used by the governments of these countries (Central and Eastern Europe) to form their industrial policy strategies. Thus, the European Union launched in 1989 several programs for rendering support to the countries in transition. This initiative developed within a very short time into the largest integral source of financing the transfer of know-how to these countries. As a result of the tendency to join the European Union, the former socialist countries tried to bring their economic policies as close as possible to the EU policy. Hence, in the industrial policy a growing number of horizontal measures of industrial policy were adopted. However, it is important to point out that the current approach to the industrial policy of the Union has its roots in the West European historical experience formed according to the specific needs of the EU countries. Hence the opinion that, in view of the different historical and development experiences, the former socialist countries have the need for completely different industrial policies. It would, therefore, be necessary to discard the general concept of the European industrial policy if it does not cover the specific problems of the countries in transition. Namely, the countries in transition should adopt the general concept of industrial policy of the Union based on competitiveness and innovativeness of the industrial sector, but also develop in the process their own framework of industrial policy.

In its approach to industrial policy the European Commission recommends to the countries in transition several general priorities: macroeconomic environment, development of competition policy, stimulating the small and medium size entrepreneurship, education and employment policy, and infrastructural policy. Only with the existence of these prerequisites is it possible to develop a successful industrial policy. One should not forget in the process certain guidelines of development of industrial policy of the East Asian NIE. The success of the East Asian NIE shows that the achievement of prominent industrial economies required a flexible and practical industrial policy. This is particularly important for the countries in transition considering that they face new challenges.

Based on insight in the industrial policy of East Asian NIE, it can be concluded that the successful industrial policy must be based on three main pillars: sustainable macroeconomic stability, open economy and investment in human resources. Furthermore, the national culture of learning is emphasized within the framework of the industrial policy of East Asian NIE. Their governments were always prone to learn from those that are better. They carefully analyzed, took over and adapted the policy of prominent economies that were already proved successful, studying the markets in which others are successful and copying their policy to detail. A moral can be drawn from the above for the East European countries in transition. It is necessary to open up to the foreign markets and learn from others that are more successful, as this is the only way to quickly achieve advanced industrial economies. This improves the education of domestic manpower. The selective openness of the East Asian NIE indicates that the export orientation is highly important for the countries in transition because their industrial production can thus become efficient and competitive.

Finally, it is important to emphasize that the experience of the European Union as well as the experience of the East Asian NIE, point out the importance of efficient institutions in creating the industrial policy. It means establishing one or two state agencies in charge of forming and implementing the industrial policy. Certain ministries can also perform this work however, it is important that they employ highly educated and expert staff which is politically neutral.

State of IP and prospects in the agro-economy of Serbia

The development of agro-economy in Serbia to date is cause-and-effect related to the course of development in the segment of implementation of respective IPs. Their lack and/or inadequate implementation, parallel with the process of destabilization of economy, resulted in exhibiting of retrograde processes in the past few decades. They have led, both on the total as well as in agro-economy, from the level of average developed to the level of undeveloped and impoverished economy. Significant constraints of further

development have appeared in connection therewith based on offensive IPs which has floated to the surface as latent. The following constraints need to be listed as basic:

- The former implementation of IP in agro-economy took place with primarily imported technology which caused the establishing of a high degree of one-way technological and economic dependence on other countries,
- The import, above all, of food technology was broad and non-selective, which pushed the agro-economy into a growing instability and further dependence, slowing down the time schedule of growth proportional to the drop of the capacity for foreign indebtedness,
- The purchase of licenses, trademarks, models and samples, transfer of know-how, technical assistance, long-term cooperation, joint investments etc., were generally detrimental to the domestic partners. This deteriorated the import-export relation – it became a practice of restrictive clauses (import of material, components etc. on one side and limitation of export on the other) which rendered the international recognition of domestic products impossible,
- The forms and conditions of cooperation between the domestic agrarian companies, based on policy of closing up and self-sufficiency that was being developed also at lower social and political levels – municipalities, represented fertile grounds and most often took on the role of transmission through which the competitive struggle was waged between the multinational companies and other foreign companies in our market,
- The objective need for development of own technology existed all the time however it was significantly limited, reduced to a minimum by inadequate policy. Hence, the economic power of the majority of domestic companies in the agrarian complex was not based on own IR efforts but on foreign, and
- Throughout all this time a significant constraint was also the non-ownership structure of capital in the domestic companies as well as different treatment of the “private” and “social” sector of the agro-economy, which represented two completely different

segments from the aspect of chances for research and technological development.

Accordingly, the former research and technological development in agro-economy, based on a broad and non-selective import of technology over a long period of time, represented a permanent source of instability of agrarian development. At the same time, being that the industrial policies are related to the total economic policy, limitations were appearing continuously at the macro and sector level. The main limitations concerning rural development in Serbia represent the possible basis for the future priorities setup. Few general limitations could be stated:

1. *An overstated role of agriculture in rural development* has occurred as a result of a misunderstanding of the role of agriculture in sustainable rural development. Agriculture has been regarded as the only sector in rural areas and as an isolated object of policies.
2. *Isolation of agricultural policies from macroeconomic policies* has been an important factor resulting in the lack of consistency in economic policy. Changing price and trade policies and the removal of state subsidies in recent past have resulted in decline in production, consumption and trade.
3. *The maintaining of a strong position by the state in the food chain* during the decades is one of the characteristics maintained by a tendency to overstate the direct role of the State through monopoly storage enterprises, state marketing channels, state regulation of foreign trade and state regulation of prices, use of resource, etc. The budgetary costs of such a policy were not as high as the administrative costs of monitoring state monopolies and their low efficiency.
4. *Cooping of CAP-like policies* in the administrative and centrally planned economy brings a lot of negative consequences by increasing both the inflationary pressure caused by higher agricultural and food prices, as well as raising the budgetary costs of agricultural policy.
5. *Lack of progress in land reform.* Land reform has been carried out through land restitution, land compensation and land distribution, but rarely

through the establishment of land market. Severe restrictions have been imposed on the land market and land tenure. Limits of the size of farms as well as moratoriums on the selling of land. One of the major technical constraints for the development of the land market and land tenure were non-transparent property rights on land.

6. Privatization without abolishing market imperfections. The privatization *per se* is not enough to increase efficiency in an environment characterized by substantial lack of market institutions developed towards the needs of private enterprises. The different approaches in the privatization have been implemented, but all the time there was a lack of progress in the privatization of the food processing industry and in up stream sectors. As a result, the food industry performance was destroyed and was not changed substantially with the change of the company management in most cases.
7. *Ad hoc policy measures vs. stable and continuation policy approach.* Consistent policy measures were not applied all the time. Government policy has continuously imposed shocks to the economy by unclear and confused policy measures which were often changing and thus producing much uncertainty and risk for agricultural producers.
8. *Direct vs. Indirect state programs.* There is a lack of experience with market economy in Serbia and because of some distorted market practices observed in Western Europe – CAP policies direct state programs are costly for the budget. It creates room for setting up market institutions, support to the market infrastructure such as storage facilities and market information systems, support for R&D and its application, support for the establishment of the extension services, further development of food safety system, food security system, and harmonizing the quality standards to international standards.

In view of the above, the agrarian economy cannot continue its trend of technological development using extensive industrial policies. It is necessary to overcome the problems of too low productivity, overly modest innovativeness and

high technological dependence on the developed world, which causes the selection of new strategic direction in the development of industrial policies in agro-economy. The initial framework of the future industrial policy should be assessed realistically. Namely, it is a fact that the Industrial Centers are practically non-existent; the development of entrepreneurship has not been oriented to production but to the service sectors; there is an absence of market and public institutions required for the implementation of industrial policy based on technological innovations; lack of domestic investment potential; interaction between the producer and the user is poor; and there are undeveloped ties between science and economy.

The development of industry and integration in the European industrial and economic flows requires creation of institutional structure and functional ties of the entrepreneurial, research and educational and public sector. Hence, the targets of IP Serbia during the period 2011-2020 should be linked with:

- Dynamic and sustainable industrial growth and development
- Proactive role of the state – institutional building up
- Improvement of investment environment
- Strengthening competitiveness
- Faster development of entrepreneurship
- Increasing and restructuring of export
- Reform of the educational system in accordance with the needs of the economy
- Active and dynamic cooperation between science and industry
- Encouraging innovations
- Reform of the labor market and employment policy
- Balance of the stabilizing, developmental, and social role of the state
- Development of regional industrial centers and regional business infrastructure
- Improvement of energy efficiency
- Environmental protection

Related to this, the possibility of stimulating the modern technological processes characterizing the global agrarian development by IP and integrating Serbia in that process would require: (1) establishing the macroeconomic stability, (2) selective openness of economy, and (3) investment in

manpower. The state should play an important role in all of this. This would lead to modernizing of the existing technological entities and adoption of innovative trends on a rather broad segment of research and technical achievements. This would provide an adequate interrelation between the processes of generation of new know-how and modern technologies, a quick and efficient transfer of new technologies and expansion of manpower base in science and practice. The objective of such shifts would be:

- Increasing the earning ability and profitability of the companies,
- Improvement of the energy conversion process,
- Upgrading the quality of management of natural resources – water, land, air,
- Development of biotechnology and increasing its effects,
- Promoting genetic potential in cattle breeding and plant production,
- Development of necessary research and professional human potential,
- Development of information system as a support to the human potential, and
- Promoting human development and understanding the importance of relation between the natural system and human creation.

In cases of modernization, it is very important for the users of research and technological achievements to be trained as active participants. Such a relation requires a certain foreknowledge and adequate technological culture in order to value fully the advantage of technical equipment and technology. This is very important under the circumstances in Serbia considering that the opinion had prevailed for a long time that only those that create technologies must be active. An active approach requires a continued orientation to keeping up with the new achievements, measurement of results of their implementation and measurement of their efficiency. Such a system cannot be established easily but is an imperative of the modern developmental trends and an unavoidable element of industrial policies.

As a consequence of the above, the development and transfer of know-how and agro technologies in Serbia represents, more than ever, practically the most important

factor of development and thereby of economic and social progress. It could, therefore, be claimed without exaggeration that its agrarian economy is at a technological crossroads of sort. However, in order for further research-technological development to bloom, it is necessary to overcome the difficulties that hamper the process of transformation of agro-economy, and only then face the international competition. A necessary requirement for this is a sufficient number of expert manpower and respective information logistics, existence of management techniques and practice, conforming of resources (land above all) and, of course, adequate financial environment. It is necessary to bear in mind here that individual countries differ in many aspects in order to be able to develop uniform formulas for IP implementation. Therefore, it is necessary to take into account the size of the economy, achieved level of economic and social development, existing economic structure, geostrategic position, state organization, etc. As may be seen, there is a strong impact of socio-economic environment on the forms, limitations and prospects of IP creation and implementation, namely, on the choice of new strategic directions that are to speed up the development of agro-economy. Such an approach could serve as a basis on which to build the national priorities. IPs should take into consideration in the process also the following factors: national targets, need to resolve acute problems, implementation of scientific possibilities, and local availability of strong research schools. The appreciation of the subject factors clearly emphasizes the basic fields of effect of IP in the achievement of development of agro-economy in Serbia, as follows:

- Agro-industrial technology
- Ecology and health food
- Biotechnology, biomedicine
- Agriculture and fishing industry
- Production of energy and energy efficiency
- Storage and transport of agricultural produce
- Use and implementation of innovations, i.e. ready-made electronic and informatics solutions in agro-economy
- NTI development program and science research manpower markets

- Investment in knowledge, know how, education and training
- Opening up to the world
- Small and medium companies in agro-economy

The process of strengthening the coordination within the state, which is a problem *per se*, is of particular importance for IPs. On the other hand, an efficient IP implementation assumes a strong professional support, organized so as to stimulate total values and develop all developmental aspects, above all in the large-scale private sector of agriculture, integrating in the best possible way the development of agro-economy in the overall concept of economic development.

Final discussion

Capital flight, foreign investment, multinational corporate competition and global interdependence of production activities are all dimensions of what has been termed the *new international division of labor*. Leading cites in the emerging international network of production and exchange often are described as “world cites”. The logic of these cites development often is assumed to be driven entirely by the imperatives of transnational capital accumulation and from the perspective of the unfolding logic of the world system. The political life in the world cites has been characterized by socio-spatial conflicts between multinational corporate growth strategies and national, regional and local forces demanding a stable economic base. Growing political pressures and declining economic returns in the periphery make the continuing reallocation of capital to these areas somewhat less attractive today than 10 years ago.

Alongside more purely technical constraints, the political and economic trends have begun to induce a reconcentration of industrial capital in core areas. This process can be conceived of as the development of new investment zones for world capital.

Concerning the agro-business of Serbia, the main priority is to create human and institutional capacities, then strategy and relating policies which will facilitate in the long run the membership in the EU. Also, faster growth of income in the rural sector represents the overcoming

priority, followed closely by attention to regional distribution. The real constraints to growth are systemic and such that, if not remedied, can only continue actual trends toward lowly state of the sector performance. On the other side, for any reform and development efforts there is a need for substantial development assistance.

There is still no consistent and long-term sustainable industrial policy in Serbia that promotes growth of competitive and market-sustainable companies. Most of the incentives are invested in remedying the losses of ruined giants, and much less in stimulating R&D, environmental protection and energy saving, and small and medium companies, which could serve as a basis for quality growth. The process of accession to the EU by Serbia will gradually change the former relations with growing adherence to the EU policy and rules which support “smaller, but quality incentives”. This means that the incentives will be focused on horizontal targets. Considering the great share of structural incentives which forced various rehabilitations and restructuring of losers on one side and maintaining a social policy of retaining peace, raised doubt about the efficiency of the incentives granted to date.

It can therefore be concluded, *inter alia*, that several following positions are important: 1) Fragmentation of anyhow small allocations has led to the lack of large multidisciplinary teams of researchers that would have the capacity to respond to some major scientific issues of interest to Serbia and the world. Hence, it is necessary to select in the field of agriculture and food (beside Ministries) a coordinator of research and technological development – projects pertaining to fundamental, development and applied research (suggestion: Faculty of Agriculture in Novi Sad and Zemun). 2) The domestic capacity is a basis for international connectedness, however, there is no critical mass of human and other capacities in any area related to agriculture and food. Therefore, the first encouraging steps in international cooperation must be supplemented by attracting technology companies. 3) Dissemination of new technologies is an important factor that determines the future of the agricultural and food sector. The productivity must increase, first of all, on large agricultural estates and in developed agricultural areas. It is necessary to include

in the scientific and technological research a much greater scope of plant and animal species of implementable type than the basic species. Furthermore, it is necessary to include greater access to energy efficiency, as well as to resource conservation programs, etc. This emphasizes to a significant degree the need to develop IPs and interaction of science and technology as well as management in practice in various segments. 4) Strengthening the interaction between economy (agriculture and food industry) and research and development institutions including training and strengthening the expert and consulting services as interlinks in dissemination and transfer of techniques and technology. It is necessary to differentiate clearly in that sense the IPs that promote technologies and management practice, specifically for large and specifically for small producers, which is not differentiated separately in former considerations and is of great importance.

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