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Genetically Modified Food Global Governance – Theoretical Approach

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Abstract

The main aim of this paper is to present the emerging global governance system of genetically modified food (GMF) from the perspective of two theoretical models: the theory of international regimes and the concept of multi-level governance (MLG). The discussed system is in the initial phase of development, which is connected with the relatively early stage of dissemination of agrobiotechnology applications. The choice of theoretical schemes can be justified on the grounds that they enable the most comprehensive analysis and explanation of the phenomena and processes taking place in the international environment as a result of implementing agrobiotechnology innovations. What is equally important, the theory of international regimes and the MLG concept complement each other, because in the former approach the emphasis is on cooperation (dissemination of GMF), while in the latter the focus is on entities involved in creating and governing the regime.
The discussion is divided into three parts. The first part presents a general description of currently binding international legal regulations applicable to GMF. The second part gives an analysis of the international regimes theory in the context of its usefulness for explaining the current and the emerging international regime of GMF governance. The last part of the paper analyses the MLG model as a construct explaining the role, influence, fulfilled functions and particular ways of behaviour of stakeholders of GMF global governance system.

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Genetically modified food international normative framework

The process of shaping international legal regulations pertaining to genetically modified food is a major and serious challenge. A separate normative system should be designed which would equalize standards in the fields of scientific research, safety tests, application of new solutions, commercialization and access to innovative products.

Owing to the character of the subject matter of standardization, and primarily due to the need to create standards of using the technology which is in the process of very intensive development and change, no separate international regime has been developed yet whose focus would be exclusively on genetically modified food or – in a broader sense – on agrobiotechnology. Furthermore, a complicated and multidimensional network of interests of various participants of international relations is not conducive to this purpose, either, as these interests frequently have a mutually exclusive character.

The current international norms pertaining to GMF do not form a separate international regime but they can be identified within already existing regimes whose standards pertain in some measure to transgenic products, including food. Table 1 presents the author's proposal for division of international legal regulations in this field.

In accordance with the division proposed in Table 1, five international regimes can be distinguished: trade, food safety, environmental, human rights and intellectual property rights (IPRs). On the other hand, according to the subject criterion, four categories of international norm-setters can be distinguished who participate in creating the global platform of standardization and governance of GMF dissemination: the United Nations system {WTO, FAO, WHO, Codex Alimentarius Commission (CAC), CESCR[1], Special Rapporteur on the right to food (RTF), UNEP}, OECD, UPOV and the European Union.

Certainly, the role of states should not be disregarded, as members of international bodies and, primarily, authors of global regimes and still one of the most important participants of international relations. This diversity and, in many cases, conflict of interests among states hampers the operation of international regimes, also with regard to issues pertaining to application of biotechnological innovations. In this particular case, we deal with a conflict of interests between states who are producers/exporters of GM plants and importers of agricultural produce (those allowing GMOs or closing the market for GMOs), and with divergent goals of developing and developed countries. The situation is further complicated by the fact that states are not the only stakeholders involved in creating international mechanisms of governance. An increasingly important role is played by non-state bodies, such as international organizations mentioned before, NGOs, transnational corporations or epistemic communities.

Another characteristic feature of the emerging global GMF governance system is simultaneous coexistence of several overlapping international

[1]Committee on Economic, Social and Cultural Rights.

regimes or agreements, with no hierarchical relation among them. This situation can be described as the normative paradox of plenty or, according to K. Raustiala and D. G. Victor, 'regime complex' which they define as follows: '(…) elemental regimes overlap in scope, subject, and time; events in one affect those in others. We term the collective of these elements a regime complex: an array of partially overlapping and nonhierarchical institutions governing a particular issue-area' (Raustiala and Victor 2004).

The rules and standards arising from international agreements overlap in the functional sense, which is not a consequence of a conflict or competition between entities creating them. In the discussed case, this is rather a difficulty with separating issues, frequently very detailed, resulting from the multitude of biotechnology sectors. For instance, the norms regulating operation, governance and protection of the genetic resources of the planet are of interest to creators of international regimes in trade, environment or human rights protection. Recurrence of some issues as subjects of international standardization makes creation of a completely distinctive international regulation system virtually impossible (Raustiala and Victor 2004). Even though particular agreements may contain references which mutually recognize the legitimacy of their regulations, the lack of a hierarchical order between them makes the states tend towards forum shopping, that is choosing an international institution or a regime to refer to (e.g. in a situation of a conflict), following the criterion of maximizing own wins, according to the game theory, or promoting own interests (Busch 2007). This phenomenon is also mentioned by R. O. Keohane who writes about: 'buying regimes' or 'the market of regimes' where states – as purchasers – choose a regime whose membership guarantees optimization of profits and minimization of costs (*See* Keohane 1982).

Furthermore, it should be emphasized that within the abovementioned five international regimes there are differences between applied international legal solutions. In most cases we deal with 'soft law' norms (no strict legal obligation is imposed to conform to regulations). However, certain systems use 'hard law' tools (regulations have a binding character and non-compliance is punishable by sanctions). The first category includes norms of the international human rights system, e.g. the right to adequate food. The other group contains e.g. legal regulations of the European Union (primary and secondary law).

Application of the technique of DNA recombination to transfer genes even between unrelated organisms arouses controversy, especially when the resulting products get into the market as food or its components. The questions about food safety and influence of GMOs on non-target organisms or biodiversity regularly appear in the international debate. The absolute majority of international legal regulations enacted so far contain mechanisms of risk evaluation and risk management based on scientific evidence. The difference lies in the model of adaptation to a threat: negative (GMF is guilty until it proves otherwise) and positive (GMF should be treated like all other food products, that is it should undergo necessary safety tests and quality analyses) (Szkarłat 2011).

International regimes theory as an explanatory model

The theory of international regimes (TIR) is one of the most useful perspectives organizing the process of explaining phenomena which occur in the contemporary international relations. It is also useful for analysing changes in the international environment caused by the influence of new technologies. Both the states and the non-state actors try to adapt to the rapidly changing reality. Frequently, technological changes occur so fast that the international environment is not able to react effectively, agreeing on cooperation rules or establishing common international legal norms. An example of such a situation is dynamic technological progress in modern genetic engineering and biotechnology. Despite the fact that first transgenic plants designed for food appeared on the market in the 1990s, no separate international regime with norms and rules regulating GMF has been developed so far. Certainly, there are international documents concerning GMOs. An example is the Cartagena Protocol on Biosafety, effective since 2003, which, however, refers only to the narrow issue of transboundary movement of living modified organisms. The exceptions are legal solutions adopted by the European Union, where the Community legislator attempts to regulate successive applications of biotechnology.

Therefore, it can be claimed that a separate international regime pertaining to genetically modified food or, in a broader sense, agrobiotechnology, is currently created, and the next stage will be its institutionalization. There is also an evident need in the international environment for further standardization of principles and rules of applying biotechnological innovations.

The discussion about usefulness of the international regimes theory for explanation of specific features of GMF global governance should begin with defining the notion of an international regime. According to S. D. Krasner: 'Regimes can be defined as sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations' (Krasner 1982).

R. O. Keohane made a right observation, pointing to a difference between international regimes and individual agreements concluded ad hoc. International regimes facilitate achievement of a consensus and reaching an agreement, because so-called transaction costs of international negotiations are lower (Keohane 1982, 334). Another benefit is improved access to credible information; frameworks of legal responsibility of parties to international agreements can be created within the regimes, while the states can pursue their national interests. Certainly, the lack of a binding international legal framework can be regarded as a disadvantage of regimes. However, it should be remembered that their main function is not to replace state legal systems, but primarily to build structures enabling negotiation and approximation of attitudes among various parties of international cooperation (Keohane 1982, 339, 340).

Nevertheless, the international system is not only a structure consisting of conglomerations of norms, principles and decision-making procedures which serve as guidelines of conducts and are developed by all participants of international regimes. Contemporary international relations include also connections between particularistic and realized interests of specific actors and power represented by them. Probably, S. Strange was not absolutely right when she claimed that: 'Regimes, if they can be said to exist at all, have little or no impact'. On the contrary, the game of powers and interests among the strongest participants of international relations exerts unquestionable influence on the shape of future international legal solutions (Krasner 1982, 190).

The above discussion is confirmed by e.g. the process of standardization of agrobiotechnology applications or GMF and attempts at creating an international mechanism governing the use of innovations. Apart from controversies connected with transgenic products safety, and primarily with long-term effects of their influence on the natural environment or health of people and animals, there are different opinions among stakeholders as regards the right of access to technologies. Some states, especially developing ones, supported by a considerable number of NGOs, take the view that everyone should be granted equal access to innovations. Consequently, in the debate on the international forum, they usually quote the provisions of e.g. the Convention on Biodiversity, the Cartagena Protocol or ITPGRFA, and definitely less frequently – agreements concluded within WTO or UPOV. The latter are especially contested as they are considered to be a manifestation of unlawful restriction of access to new solutions for those who need them the most. It is clear that one of the most important factors of impact is still the power of the most influential players, such as the United States, the European Union, China, but also Brazil, Argentina or the Republic of South Africa. International negotiations on various aspects of using agrobiotechnology are usually the game of interests between states producing and exporting GMOs and states importing food or the European Union protecting its internal market. Participation of non-state entities, particularly transnational corporations and epistemic communities, is also very important. International enterprises are not de jure creators or members of international regimes or parties to agreements. Nevertheless, they de facto influence the progress and results of international negotiations. In the case of agrobiotechnology corporations, this impact is very strong, especially due to the high stake in the game. We deal here with access to innovations such as new varieties of plants, transgenic seed etc., often administered by companies. Corporations which apply for patent protection of their products argue that the research and development process is long and very expensive. Income from sale of licences or technology fees are a chance for return on investment, multiplication of profits, but also maintaining of investment capabilities and continuation of technological advancement. This argumentation does not convince the developing countries and some NGOs, which accuse corporations of unethical conduct or infringement of human rights, e.g. the right to enjoy the benefits of scientific progress (Article 15 ICESCR)

The states with developed technological base and transnational corporations are accused of restricting access to innovations for poor farmers from the Southern countries, and of simultaneous plunder of genetic resources within their territory. The developing countries have a weaker bargaining position in international negotiations, this is why the stronger players, such as the US or the EU, frequently exploit them in their trade games. For example, the EU is one of the most important trade partners for many African states. Knowing the attitude of some EU member states and most public opinion to GMF, they close their markets and agriculture to potential positive effects of technological change, for fear of losing an important market.

On the basis of our discussion so far, we may have the impression that the idea of creating the international regime for GMF is purposeless, because it would nonetheless be dominated by interests of the most influential players, in this case a condominium of the state and corporations. This is not true. The system of norms, rules and procedures, developed so far, functioning within the framework of five regimes, fulfils its tasks. It should be emphasized that many developing countries did not have regulations pertaining to food safety, protection of biodiversity or intellectual property rights before. While creating or amending their legal systems, these states followed the standards of the Cartagena Protocol, the Rio Conventions, or recommendations and guidelines of the Codex Alimentarius Commission.

The cognitivist approach within the international regimes theory is a significant supplement and a helpful tool for explanation of the phenomena occurring in contemporary international relations as a consequence of the technological progress. The representatives of this school – P. Haas and E. Haas – emphasized the significance of knowledge, science and technology as factors of change, beginning with redefinition of interests of state entities (Hasenclever et al 1997, 138). Certainly, cognitivists represent a broad understanding of the notion of knowledge, including – apart from technological change or scientific progress – also acquisition of new information or knowledge resulting from experience and from repetitiveness of some situations or processes. However, it is primarily the new knowledge that creates the need for cooperation, based on established principles, among parties of international relations. The category of new knowledge includes such innovations as transgenic food which, as a new phenomenon, calls for reaction and for taking a stand (Hasenclever et al 1997, 139).

Acquisition of knowledge usually happens through the process of learning which is also considered important by cognitivists who notice that international regimes are subject to the processes of learning and, as a result, they change, evolve, develop or cease to exist. This is an ideal theoretical scheme when it is necessary to explain the phenomena which undergo continuous and dynamic transformation. As it has already been mentioned, no separate regime for agrobiotechnology applications or exclusively for GMF has been developed yet. Even if particular parties concerned have an idea of the character and specific features of this regime, they should remember that modern biotechnology is in the phase of incredibly fast development and future

consequences are uncertain, thus the optimal normative and governance model is unknown, too. Cognitivists remind that as there are no foreordained and unchanging national interests, and likewise there are no optimal regimes. Consequently, an element of uncertainty should be taken into account, resulting from changes which cannot be fully predicted. Such an attitude is especially useful in research on the influence of technological progress on regimes, mechanisms of international governance and behaviour of participants of international relations (Haas 1982, 209).

Nevertheless, cognitivists have one reservation concerning the significance and impact of knowledge on shaping or reconfiguration of regimes – namely, it must be shared by a wide circle of the most influential actors. It is assumed that the international environment is characterised by a high level of heterogeneity. As a consequence, decision-makers act in the permanent state of uncertainty, with limited access to information. In effect, epistemic communities, consisting of experts and performing an advisory role, are the increasingly valued partner and participant of international politics. However, P. Haas points to the fact that their power of influence depends on cohesion of opinions on a given subject (Hasenclever et al 1997, 150). The example of transgenic food is exceptional and thus interesting. Controversies over the legitimacy of dissemination of these products and their safety are not the domain of politicians, ecological NGOs or the public opinion. Moreover, considerable polarization within the scientific circles is visible, which is one of the reasons for decreased trust in the academic environment, especially among average consumer.

Multi-level governance (MLG) as a complementary approach

The MLG concept is a complementary research model, used to analyse and explain the emerging international legal system establishing norms of GMF governance in the global dimension. While the international regimes theory is issue-centred, the MLG concept is actor-centred (Piattoni 2009).

As G. Marks – the author of the concept – emphasizes, the diffusion of power, assuming new political forms, triggered reaction of the scientific environment which started defining new phenomena and creating a new framework of notions, such as MLG, polycentric governance, multi-perspectival governance etc. In this approach, the focus is on the phenomena of supra-nationalization, decentralization, diffusion of power and the role of state and non-state actors in the decision-making process taking place on many levels. The linear perception of international relations as occurring mainly between state entities, is gradually abandoned. Deterritorialization of these relations is also assumed, which means that levels of governance cannot be identified solely with territorial levels (state, regional, sub-regional etc), but they are rather groups of overlapping networks of mutual connections. An important feature is emphasis on participation of non-state entities, which is reflected in the global GMF governance system. The influence of transnational

corporations, NGOs, international institutions, epistemic communities and even individuals, is one of the characteristic features of the discussed governance model.

This is why it can be described not as actor-centred but as multi-actor-centred. What is more, particular actors are not associated with specific levels of governance, but they rather move freely among them (Piattoni 2009).

An advantage of this approach is its inclusive or rather comprehensive character, as MLG does not refer to international relations in the popular sense, but it considerably extends the group of entities including public and non-public stakeholders. The latter are all non-public entities whose interest lies in participation in governance of a given area. What is equally important, MLG is not based on hierarchical order, there is no stratification of significance or domination/jurisdiction of one level over another (Guy Peters and Pierre 2005, 82, 83).

G. Marks and L. Hooghe distinguish two types of MLG. The first type resembles a traditional federal system consisting of at least two levels of governance between which there is a clear division of competence, and participants are states. MLG of the second type has a much more heterogeneous structure in comparison with the first type. There are many levels of governance here, each designed to achieve a specific goal. Usually, both types occur side by side, what Ch. Skelcher describes as 'polycentric governance'(Piattoni 2009). Owing to the lack of hierarchical relations, particular kinds of jurisdiction overlap in their competence, and the involved entities very often overstep the boundaries of jurisdiction – both in the horizontal and vertical dimension – which may cause conflicts. The second type of MLG is characterized by a high degree of flexibility in the structural and functional sense, in order to react immediately to the quickly changing preferences of stakeholders. Another distinguishing feature is the occurrence of cooperation structures called public-private partnerships (PPP), much more frequently than in type 1(Marks and Hooghe 1982).

The co-occurrence of both MLG types is defined by J. Rosenau as two worlds of global politics: 'one as system of states and their national governments that has long dominated the course of events and the other a multi-centric system of diverse types of other collectivities that have lately emerged as rival sources of authority that sometimes cooperate with, often compete with, and endlessly interact with the state-centric system' (Rosenau 2005, 32).

The global GMF governance system is an example of bifurcation of competence, power and responsibility in the selected area of politics. On the other hand, the influence of state actors on norm-setting activities on various levels and on the processes of policy implementation can still be observed. This is confirmed e.g. in the EU policy, where the European Commission as an institution endowed with legislation initiative, but also participating in enactment of law e.g. through the comitology procedure, is involved in dispute with member states which frequently have different opinions on usefulness and safety of GMOs. In this dispute, technology and its applications are minor

problems, while the most serious issue is politicization of the decision-making process through participation of comitology committees whose members are politicians and not experts. Performing its tasks, the Commission closely cooperates with a number of advisory bodies of expert character: ad hoc consultation committees, as well as advisory, scientific and comitology committees. It also relies on expert opinions provided by the European Food Safety Authority (EFSA). In literature this model is described as technocratic governance (Fischer 2008) in which, apart from the traditionally defined decision-making centre, public and private entities also participate in the decision-making process, contributing their expert knowledge. The complicated issue of new technologies and their products demands from decision-makers more advanced technical knowledge and more information necessary to take optimal decisions.

We return here to the role and participation of epistemic structures/ communities in GMF global governance system. P. Haas mentions three conditions of actual influence of epistemic communities on the decision-making process: firstly, high level of uncertainty and lack of knowledge among the decision-makers; secondly, expert circles must be consistent in their opinions; thirdly, high institutionalization of expert support (Hasenclever et al 1997, 150, 151).

Unfortunately, in GMF global governance system, the second condition is still not fulfilled. As a consequence, the divided academic environment is frequently prone to political influences, which may result in decreased trust and undermined credibility of scientific analyses.

An excellent example of the implementation of the MLG concept and cooperation of various international regimes, which at least to a certain extent refer to issues connected with food production or food safety, is the Consultative Group on International Agricultural Research (CGIAR). This is an international organization of a hybrid membership structure, whose members are states (21 developing and 26 developed countries), 4 funds with private capital, 13 international organizations of the global and regional range (e.g. FAO, IFAD, UNDP or World Bank). Within CGIAR structure, there are 15 research and development centres, located on every continent except for Australia. Certainly, GMF and other biotechnology applications are only a part of issues managed by CGIAR, however, this organization may be a model on the basis of which global governance systems will be built in the future, also the one pertaining specifically to GMF (Szkarłat 2011).

Conclusions

Due to the process of very intensive development and change of modern agrobiotechnology a separate GMF global governance system is still under construction. Certainly there is a demand of establishing a specialized governing model that would be applicable to all stages of agrobiotech products development and commercialization. Moreover, the above-mentioned

international regime should be based on the assumption of a constant adaptation to technological change, reconstruction of stakeholders' interests and fluctuation of power resulting from technological impact on international community structure.

Therefore the most comprehensive theoretical constructs explaining those new phenomena are theory of international regimes with a special focus on cognitive approach and a type II of multi-level governance concept, which puts emphasize on diversity of actors involved.

Table 1. *GMF international normative framework*

International regimes		Trade	Food safety	Environmental	Human rights	IPRs
UN system	WTO	TBT	SPS			TRIPS
	CESCR/ SR on RTF				Voluntary guidelines, 2004 General Comment 12 UD on the Eradication of Hunger and Malnutrition 1974	
	UNEP/Rio 'Earth Summit			Cartagena Protocol		
	FAO			ITPGRFA →		→
	FAO/WHO CAC		Principles Guidelines			
OECD						Guidelines IPRs in biotech
UPOV				Convention →		→
UE	Reg. (EC) No 1946/2003	Reg. (EC) No 258/97	Dir. 2001/18/ EC			
		Reg.(EC) 178/2002	Council Dir. 2002/53/ EC			
	Reg. (EC) →		→			

	No 1829/2003					
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