

## STRATEGIC OBJECTIVES, PRIORITIES AND PRINCIPLES IN THE MANAGEMENT AND DEVELOPMENT OF THE HYDROMELIORATIVE SECTOR IN BULGARIA

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**Abstract:** *The paper presents an analysis of the main objectives, priorities and principles set out in the strategic framework for management and development of the irrigation sector in Bulgaria for the periods 2001-2020 and 2018-2030, respectively. The sharp decline in the share of the country's irrigated areas, mainly due to gross mismanagement, maladministration and unregulated and unsupervised responsibilities in the process of restructuring and restoration of land ownership, establishes new priorities as identified in the Strategy for the development of irrigated agriculture under the conditions of private agricultural property. The summarised results of the implementation of the accomplished objectives pursued in the Strategy (2001-2020) inevitably point to the conclusion that the restructuring processes of the country's hydromelioration sector are complex, lengthy, time-consuming and practically ineffective. The critical drop of the amount of the actually irrigated areas to less than 10% of all the irrigable land proves to be the primary reason for changing the existing framework in Bulgaria and adopting a fundamentally new "Common strategy for the management and development of the hydromeliorations and protection against the harmful effects of water" over the period 2018-2030.*

**Key words:** *Hydromelioration sector, Strategic priorities, Irrigation associations*

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### 1. INTRODUCTION

As a result of the reforms that have been carried out in the sector of agriculture since the beginning of the transition to a market-oriented system and the attempts to regulate legally the official restructuring of the state-owned company "Irrigation Systems" JSC (hereafter referred to as EAD), the hydromeliorative systems and facilities and the development of irrigated agriculture in Bulgaria is still lagging behind. The agricultural land irrigated under the conditions of private agricultural property cover 5-9% of the constructed irrigation areas on the territory of the country, the existing hydromeliorative infrastructure is largely inoperable and is in need of restoration and repair.

The processes of organizational transformation in the sector of irrigated agriculture necessitate the advancement and legal regulation of a national strategy for development of the hydromeliorative systems and the irrigated agriculture under the conditions of private agricultural property. A strategy for development of the hydromelioration sector in a market environment has been developed by *the Scientific Institute of Hydromelioration* and defines the main priorities of the State policy and all the necessary long-term measures to be adopted in the sector over the period (2001-2020). Establishment and operation of the irrigation associations, as part of the reforms introduced in the sector of irrigated agriculture, was a step towards the inclusion of a new type of organizational forms for more effective implementation of the irrigation process through the establishment of a rational organisation of irrigation water

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distribution, employment of efficient water-saving and resource-conserving irrigation technologies, achievement of a higher level of the realized economic effects and net income of the accomplished irrigation activities.

## **2. ANALYSIS OF THE STRATEGIC OBJECTIVES AND PRIORITIES IN THE MANAGEMENT AND DEVELOPMENT OF THE HYDROMELIORATION SECTOR IN THE COUNTRY FOR THE PERIOD 2001-2020**

### **2.1. Main objectives set out in the Strategy for the development of the “Hydromelioration” sector**

The sharp decline in the share of the country’s irrigated areas and the imposed constraints in the process of restructuring and restoration of land ownership, demanded new objectives to be introduced in the hydromelioration sector reforms related to the creation of *conditions for reviving and restoring the irrigation facilities in Bulgaria*. Those were the objectives set in the Strategy for the development of irrigated agriculture under the conditions of private agricultural property, whose main priorities can be recapped as follows:

- ***Implementing a decentralized model of control over the process of organization, distribution and supply of irrigation water***, in which the hydromeliorative systems (HMS) and facilities are managed and operated by the state-owned company “Irrigation Systems” in joint cooperation with the organizations of farmers users pulled together to form the present irrigation associations;
- ***Encouraging direct motivation and full involvement on the part of farmers-water users*** in taking competitive advantage of the available HMS and facilities being in good repair and full operation, ensuring reliability in the supply of irrigation water at an affordable price, which in turn ensures the competitiveness of the intensive crop production mainly for the needs of the domestic market and, where possible, for export to European markets;
- ***Enhancing the efficiency of the well-maintained HMS and operable facilities, that would also manifest itself in the direct motivation of organised water users to manage the respective facilities at relatively lower costs***, initiated through a rational organization in the delivery and distribution of irrigation water, including clear rules on strict water allocation among the individual water users;
- ***Creating conditions for pulling farmers together in organisations, thus, revealing the benefits for water users from their affiliation with irrigation associations***, expressed in the increase in the area under irrigation, respectively in the supplied quantities of water volumes or masses, contributing to potential decrease in the cost of water for irrigation;
- ***Gradual, partial restructuring of the assets of “Irrigation Systems” EAD and their conferral to the potential direct users, organised in irrigation associations, for proper management and efficient operation.***

### **2.2. Prerequisites for realization of the Strategy for the management of the “Hydromeliorations” sector**

The optimum conditions for achievement of the objectives and priorities related to the implementation of the Strategy for management and development of the hydromelioration sector (2001-2020) are mainly subject to:

- ***Solving all the technological and technical problems related to the inadequacy and ineffectiveness of the systems to serve the distinct multitude of private farms.***

- **Financial provision of the objectives set in the Strategy for the development of irrigated agriculture under the conditions of private agricultural property.**<sup>167</sup>
- **Legal and regulatory framework governing the organizational restructuring process including the provision of separate parts of the assets of “Irrigation Systems” to the particular water users associations, which inevitably necessitates the approval of a special Act regarding the respective irrigation associations.**
- **Institutional provision of the reform set out in the Strategy.** The reform in the irrigated agriculture was guided by the MAF and supported by the institutions responsible for conducting public policy in the hydromeliorations sector.

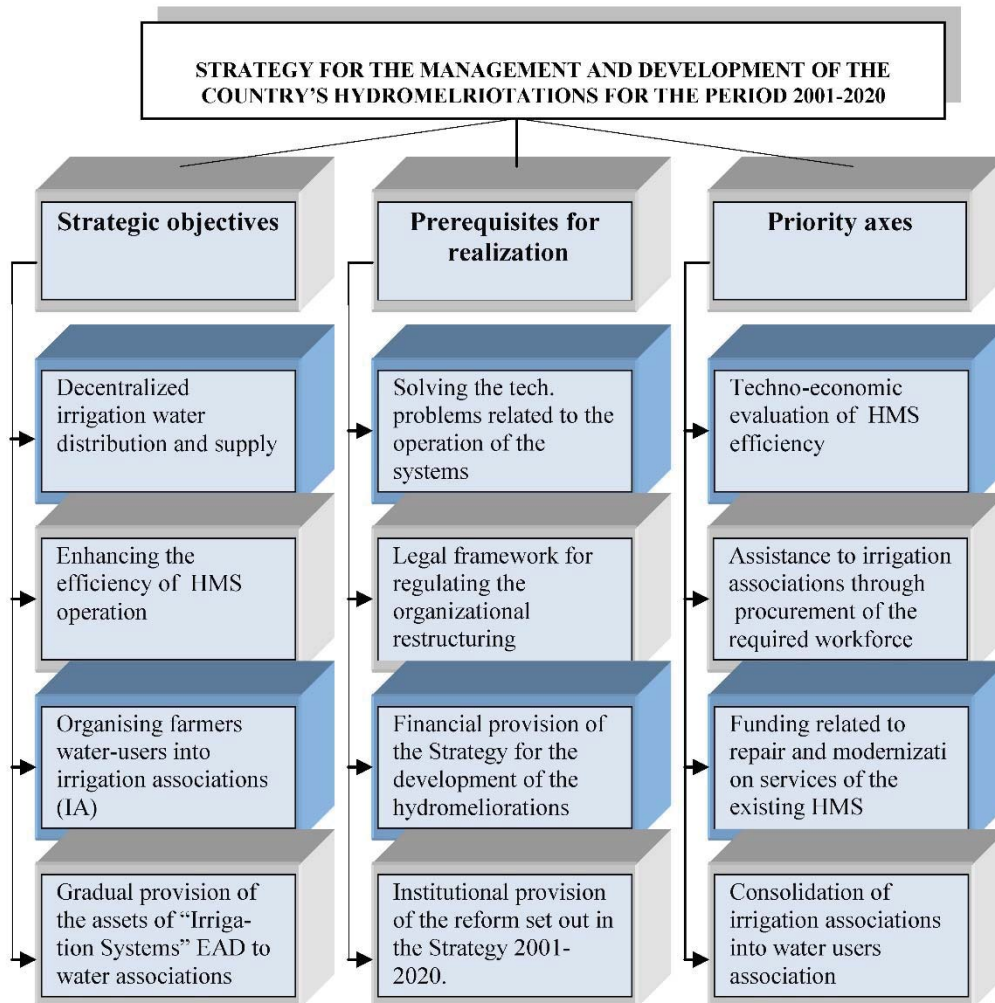


Figure 1: Main objectives, priorities and prerequisites for the realization of the Strategy for the development of the hydromeliorations sector 2001-2020

The summarised results of the implementation of the accomplished objectives pursued in the Strategy for the development of irrigated agriculture as to 2017, inevitably point to the conclusion that the restructuring processes of the country's hydromelioration sector are

<sup>167</sup> Funding of the hydromeliorative activities in Bulgaria in the context of decentralization has been realized through: (1) Funding activities related to the main hydromeliorative infrastructure (HMI) with financial resources by MAF; (2) Financial support to the Irrigation Associations through the EU - SAPARD pre-accession programme (2001-2006); (3) Funding Irrigation Associations by the national budget; (4) Financial support to the IA and farm water users through the Rural Development Programme (2007-2013).

complex, lengthy, time-consuming and practically ineffective, which is, furthermore, proven by the fact that by 2016<sup>168</sup>, as shown by the statistical data on irrigation of agricultural lands, the actual reported irrigated areas were approximately 43 300 ha out of 541 777 ha of areas equipped for irrigation, which amounts only to 8%.

The critical drop of the amount of the actually irrigated areas, in the context of extremely favorable natural resources in addition to the accumulated production experience in the cultivation of irrigated crops proves to be the primary reason for improvement and modification of the existing framework and adopting a fundamentally new *Common strategy for management and development of the hydromeliorations in Bulgaria* in long-term planning processes (2018-2030)<sup>169</sup>.

### 3. COMMON STRATEGY FOR MANAGEMENT AND DEVELOPMENT OF THE HYDROMELIORATION FACILITIES IN THE COUNTRY (2018-2030)

The inference drawn from the adopted *Common strategy for management and development of the hydromeliorations and protection against the harmful effects of water* is that “the farm structure in Bulgaria is characterised by an extremely high concentration of the utilised agricultural land. In practice, 91,5% of farms with an area of 10 hectares or less account for 7% of the total arable land. The above-mentioned farms, however, constitute 42% of the irrigated areas in Bulgaria” [10]. The Strategy further states that in 2000 the state-owned enterprise “Irrigation Systems” managed 235 irrigation systems designed to serve over 740 000 ha of irrigation-prone areas. In practice, however, the actual irrigated areas in the country, serviced and irrigated by the company are less than 10% of the technically irrigable areas and represent approximately 40% of the irrigated land at the beginning of the structural reform in the sector of agriculture (1990) - see figures 2 and 3.

The state of the hydromelioration sector also determines the main priorities related to the growth of irrigated agriculture in Bulgaria, including the structures for implementation of the “irrigation water supply” service. The latter are reflected in the objectives of *the Common Strategy for Management and Development of Hydromeliorations in Bulgaria for the period 2018-2030*. “The Strategy also outlines the framework of legal and institutional reforms which will have a strong impact on the current organisational structures. Provisions have been made as to a shared responsibility between the system operators/service providers, irrigation associations, and executive authorities (at national and local level) with regard to the management of the systems” [8].

Year	Irrigable areas, ha	Irrigated areas, ha	Irrigated areas against irrigable, %
2008	541800	45740	8,44
2009	541700	39910	7,37
2010	541800	40000	6,45
2011	541799	42703	7,9
2012	541779	44692	8,2

<sup>168</sup> Data according to the Annual Agrarian Report of MAF, 2017.

<sup>169</sup> The initiation and development of a “*Common strategy for management and development of the hydromeliorations and protection against the harmful effects of water in Bulgaria*” for the period 2018-2030 is a joint development of the Ministry of Agriculture and Food (MAF) of Bulgaria and the World Bank;

2013	541779	42055	7,8
2014	541779	29650	5,5
2015	541779	44759	8,3
2016	541777	43300	7,9

Table 1: Irrigated areas in the country for the period 2008-2016<sup>170</sup>

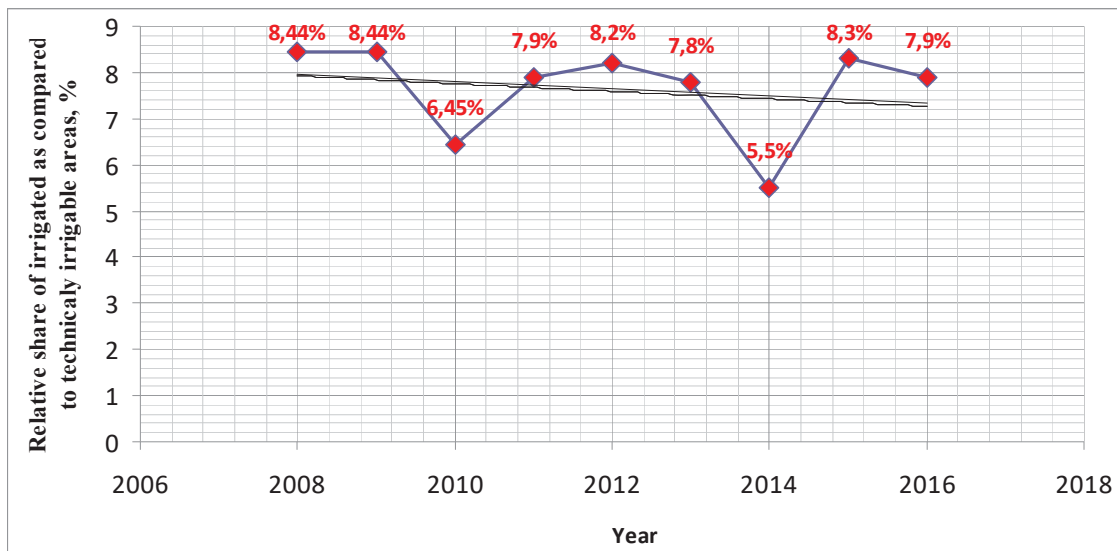


Figure 2: Relative share of irrigated as compared to technically irrigable areas over the period 2008-2016

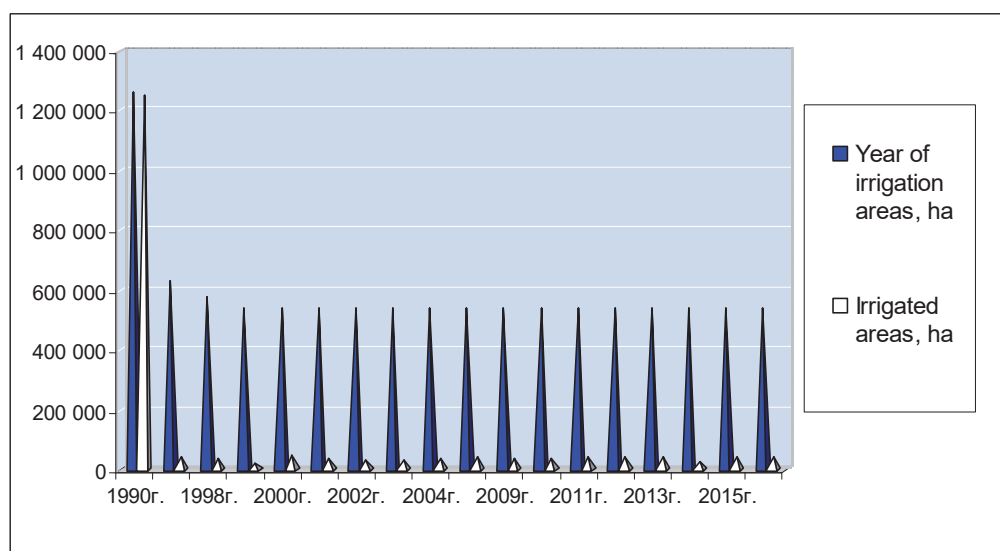


Figure 3: Ratio of technically irrigable as to actually irrigated areas for the period 1997-2016, as compared to 1990<sup>171</sup>

Briefly stated below are *the overall strategic objectives* with regard to restructuring in the sector “Hydromelioration” [8]:

<sup>170</sup> Data according to the Annual Agrarian Reports: 2010-2017.

<sup>171</sup> Data according to the Statistical Yearbooks of the Republic of Bulgaria: 2000, 2004, 2008, 2010; Annual Agrarian Reports: 2010-2017; Bulgarian Government Information Service Bulletin, No.424, December, 1992.

**Strategic objective 1:** Building a legal and institutional capacity to show the right way to set up autonomous and self-financing organisations for management of financially sustainable hydromeliorative systems:

*Objective as to 2018:* Accomplishment of *the first phase* of the legal and institutional reform, whose major aim is to adopt a new hydromeliorations Act and make significant amendments to the Irrigation Associations Act, as well as attempted restructuring of the former branches of the “Irrigation Systems” EAD into Regional hydromelioration public enterprises, taking full responsibility for the proper operation, regular maintenance and overall management of the hydromeliorative infrastructure, supervised by a Management Board, including representatives of the relevant IA, state and municipal authorities;

*Objective as to 2020:* Strengthening regional hydromelioration enterprises and irrigation and drainage associations, as well as achieving strong interaction and cooperation among them in the management of the HMS.

**Strategic objective 2:** Enhancing the competitiveness of the agricultural sector by providing a long-term perspective, identifying investment priorities in agricultural (farm) irrigation and drainage and related services:

*Objective as to 2018:* The first batch of permissible investment support for the purposes of irrigation should be provided at farm level distributed throughout the country;

*Objective as to 2020:* Permissible investment support for irrigation and drainage has been granted to farmers-beneficiaries in areas designated for reconstruction and modernization of the main water supply network.

**Strategic objective 3:** Restoring access to the hydromeliorative infrastructure of agricultural arable land and its sustainable use through investments in rehabilitation and modernisation:

*Objective as to 2018:* With the financial support of the European Agricultural Fund for Rural Development, the irrigation infrastructure of agricultural land in the areas of the leading projects managed by the IA has been restored and modernized, serving 2 500 ha of irrigated area;

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*Work experience:*

1997 – 2017, Dobrudja College of Technology – Dobrich, within the structure of Varna Technical University -

Lecturer, co-opted member into the Department of Industrial Management at the Technical University of Varna

1990 – 1996, Semi-Higher Institute in Mechanical and Electrical Engineering - Dobrich,

Position held: teacher of “Economics, Organization and Management”

1987 – 1989, Plant for Metal Cutting Tools - Gabrovo, Department of “New Technologies”,

Position held: Engineering Technologist

Scientific and educational degree –Doctoral University of Ruse “Angel Kanchev”-

Department of Management and Business Development

Member of the Union of Scientists in Bulgaria; Chair of the Technical Sciences Section of the Union of Scientists in Bulgaria – Dobrich over the period of 2003 -2013, presently – Deputy Chair of the section mentioned above;

Member of the International Association of Sustainable Development (IASD) - Varna, Bulgaria since 2015 until now; Member of the IASD Control Board for the 2017 – 2021 mandate

*Objective as to 2020:* The hydromeliorative infrastructure of the agricultural land in the areas of the successful projects managed by the Regional hydromelioration enterprises has been restored and modernized, serving 25 000 ha of irrigated area.

#### 4. CONCLUSION

As a result of the conducted in-depth analysis into the existing problems facing the hydromelioration sector in Bulgaria and the strategic objectives and priorities that have been pursued towards its restructuring, advanced in the paper is the belief that:

1. The newly adopted Strategy (2018-2030), considered altogether, as well as the successful accomplishment of the outlined short, medium and long-term strategic objectives, should contribute to the restoration and smooth operation of an effective and efficient hydromelioration sector, increased agriculture-based production, bringing about an economically viable and competitive agriculture – more sustainable and more resistant, or rather adaptable, to the adverse impacts of climate variability and change;
2. In order to achieve the stated objectives and priorities, the Strategy allocates the responsibilities for the effective implementation of the irrigation activities among twelve public limited (or joint stock) companies and a multitude of irrigation associations all over the country;
3. The expectations of experts and stakeholders are associated with the probability of enhanced organisational and technological opportunities, improved economic motivation for irrigation, including the introduction of a regional principle for the management of HMS, based on the effective interaction between public hydromelioration territorial enterprises and IA;
4. The irrigation associations are also designated as the main beneficiaries of the EAFRD as regards the implementation of investment projects for the rehabilitation and modernisation of the irrigation infrastructure for the existing systems and facilities operated by them in their own territories.

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