



## **8. Private Agricultural Sector**

### ***Summary***

The agricultural sector is vital for advancing the economy of many countries worldwide. Its importance stems from the fact that it represents the actual means to bridge the gap between production and consumption. In Iraqi Kurdistan, agriculture has the potential to be a strategic sector because of the suitable climate and soil and because of the abundance and diversity of water sources. Hence, if properly utilized, the sector can be a major component of economic progress, as it produces strategic crops such as wheat, barley, tobacco, cotton, and chickpeas. This sector, however, continues to use primitive tools in various agricultural operations and suffers from administrative, financial, and technical problems. Private sector companies are determined to change the pace of performance and productivity in this sector, especially with the numerous incentives the 2006 Foreign Investment Law provided. This is combined with the abundance of arable land in the region, which amounts to 5 million donums, as outlines in the following table:

<b>Areas</b>	<b>Total donums</b>	<b>Non-arable donums</b>	<b>Arable donums</b>	<b>Rain-fed donums</b>	<b>Irrigated donums</b>
<b>Guaranteed rainfall</b>	۳,۶۶۵,۲۸۸	۲,۹۶۹,۶۵۹	۶۹۵,۶۲۹	۶۱۹,۹۴۹	۷۵,۶۸۰
<b>Semi-guaranteed rainfall</b>	۱,۴۰۳,۴۵۲	۵۰۰,۳۲۷	۹۰۳,۱۲۵	۸۳۹,۵۱۲	۶۳,۶۱۳
<b>Non-guaranteed rainfall</b>	۹۸۷,۷۴۰	۸۱,۳۷۶	۹۰۶,۳۶۴	۸۶۳,۱۱۷	۴۳,۲۴۷
<b>Total</b>	۶,۰۵۶,۴۸۰	۳,۵۵۱,۳۶۲	۲,۵۰۵,۱۱۸	۲,۳۲۲,۵۷۸	۱۸۲,۵۴۰

Despite the availability of arable land in the region, and despite the 2006 Foreign Investment Law, a number of obstacles impede the sector. Most of these challenges fall under the heading of red tape and the fact that current laws regulating agricultural operations are not compatible with the needs of agricultural development. Moreover, agricultural machinery used in the region is outdated; marketing services are weak (agricultural transport and storage); and methods of producing, raising, and marketing livestock are primitive. Hence, the sector seeks a number of interrelated measures:

- Set up firms and factories that depend on local agricultural production;
- Provide the necessary facilities to the sector to encourage this process;
- Fully implement the Investment Law;
- Establish laboratories that conduct soil and water analysis to identify fertilization needs;
- Encourage investors to establish fertilizer factories as strategic investment projects; and
- Establish laboratories to identify plant diseases and adopt the integrated pest management system (IPM).

### **Introduction**

Kurdistan currently faces the grave challenge of an enormous nutrition gap between local production and local demand. The region imports most of its needs from abroad using hard currency. Therefore, developing and modernizing the agricultural sector is of utmost importance, because it is directly responsible for meeting the region's food needs and the industry's raw materials needs. To achieve this, there is an urgent need to address the problems and obstacles that impede this vital sector, to jumpstart its role, and to provide the means to solve its problems and shortcomings.

Advancing agricultural production is vital to overcoming the gap between production and consumption. Technological progress is a major factor since scientific research and technology are important to increasing production, which includes biological factors, preserving genetic origins, standardizing and evaluating them, and introducing new kinds and crossbreeds. There is also a need to increase the use of integrated packages that include all levels of agricultural technology such as large-scale production of high quality seeds, mechanization, and modern irrigation methods. In addition, modern methods of crop management must be implemented, including integrated control, tissue cultivation, preservation of genetic origins, animal production, unconventional animal feed production, and post-harvest processes. It is noteworthy, then, that the current level of scientific research, particularly agricultural research, is quite limited and therefore insufficient to meet these goals, despite major crises in the region.

Developing the agricultural sector in Kurdistan requires raising productivity, increasing cultivated areas, vertical expansion through scientific research and raising the income levels of workers in the sector. The annual average per capita share of domestic product and agricultural product in Iraq for the years 2000, 2001, and 2002 amounted to US\$73,315 – US\$43,992, while the average agricultural share of the GDP during those years amounted to US\$7,936.7 – US\$24,944.7 million. No accurate statistics for these rates in Iraqi Kurdistan are available.

### *Characteristics of Private Agricultural Sector*

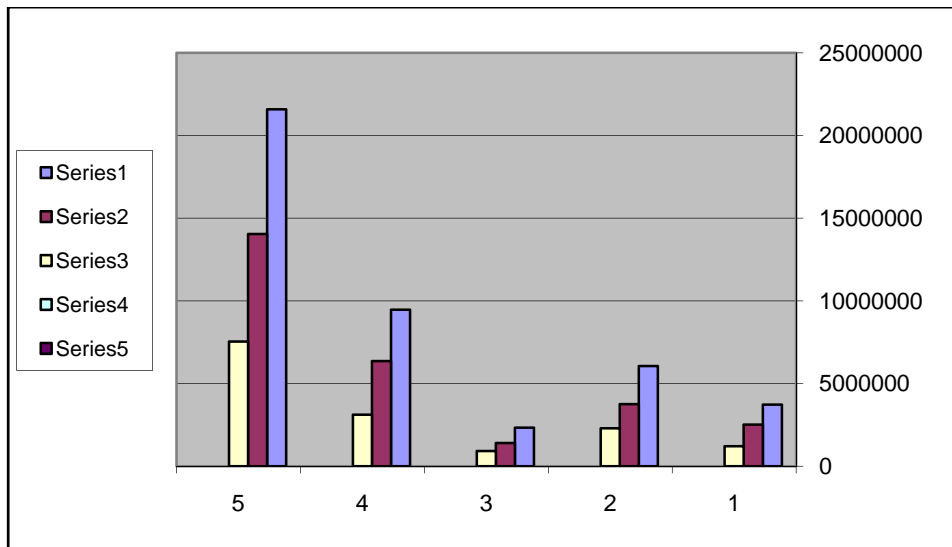
#### **Land Agricultural**

Based on available statistics, the area of arable land in Iraq is estimated at around 48 million donums, or approximately 27 percent of the total area of Iraq. Five million donums of this agricultural land lie within Kurdistan, with a total area of around 15,415,280 donums, as outlined in table 1 and chart 1 below.

Table 1. Areas of Land in Iraqi Kurdistan

Province	Arable land in donums	Non-arable land in donums	Total land in donums
Dohouk	1,206,169	2,019,424	3,225,593
Erbil	2,297,462	3,709,018	6,006,480
Kirkuk	921,907	1,408,046	2,330,003
Suleimaniya	3,113,127	6,304,873	9,418,000
Total	7,538,710	14,041,361	21,580,071

Chart 1. Arable Land in Kurdistan



Key: 1. Represents arable land in Dohouk; 2. Represents arable land in Erbil; 3. Represents arable land in Kirkuk; 4. Represents arable land in Suleimaniya; 5. Represents total arable land

Most of this land lies within the areas where rainfall is guaranteed or semi-guaranteed. However, only about 33 percent of arable land is actually being cultivated, which means that around 67 percent of arable land is currently unused.

#### *Crop Structure*

The agricultural crops cultivated on an annual basis include:

**Grain crops.** Grain crops account for 70–80 percent of annually cultivated land, and for many reasons have low productivity per donum. Table 1 in the annex clarifies the crop structure (rain-fed field crops). There is an opportunity to increase these quantities through increased use of arable land and the adoption of modern cultivation methods. Since rain-fed arable land amounts to around 993,838 donums in Dohouk, this means that there are about 471,547 donums that can be exploited to cultivate these crops. The same applies to wide tracts of currently unexploited areas.

**Vegetable crops.** Vegetable crops rank second in the crop structure, estimated at 7–9 percent of exploited land. Local product may meet local needs with some surplus during productive seasons, but other seasons witness a deficit, necessitating importing produce from elsewhere in Iraq or from abroad. Therefore, there is an urgent need for greenhouse production and other covered farming methods. Cultivated vegetable production and quantities appear in tables 2 and 3.

**Orchards.** Land cultivated with fruits comprises a small segment of the total due to the deliberate destruction of orchards during the 1980s. As a result, production barely covers the needs of the region. This fact has led to increased demand from other areas within Iraq, which has caused higher prices for local consumers. Fruit cultivation is not currently expanding in a proportionate manner.

**Oleic crops.** These crops are cultivated on only 3–4 percent of the exploited land. Cultivation is limited because of the lack of processing means. It is extremely

necessary to increase cultivation of this segment and find appropriate means for local processing.

*Animal Resources*

Kurdistan is a suitable region for raising livestock because of the abundance of pasture areas and water, two main necessities for raising and developing livestock. Cattle, poultry, and fish are raised, with a limited number of private livestock enterprises in different provinces. However, these enterprises are underdeveloped because of the lack of necessary facilities and processes. The currently available statistics on animal resources in the region appear in table 4. Livestock enterprises in Dohouk and Suleimaniya appear in tables 5, 6, and 7.

*Water Resources*

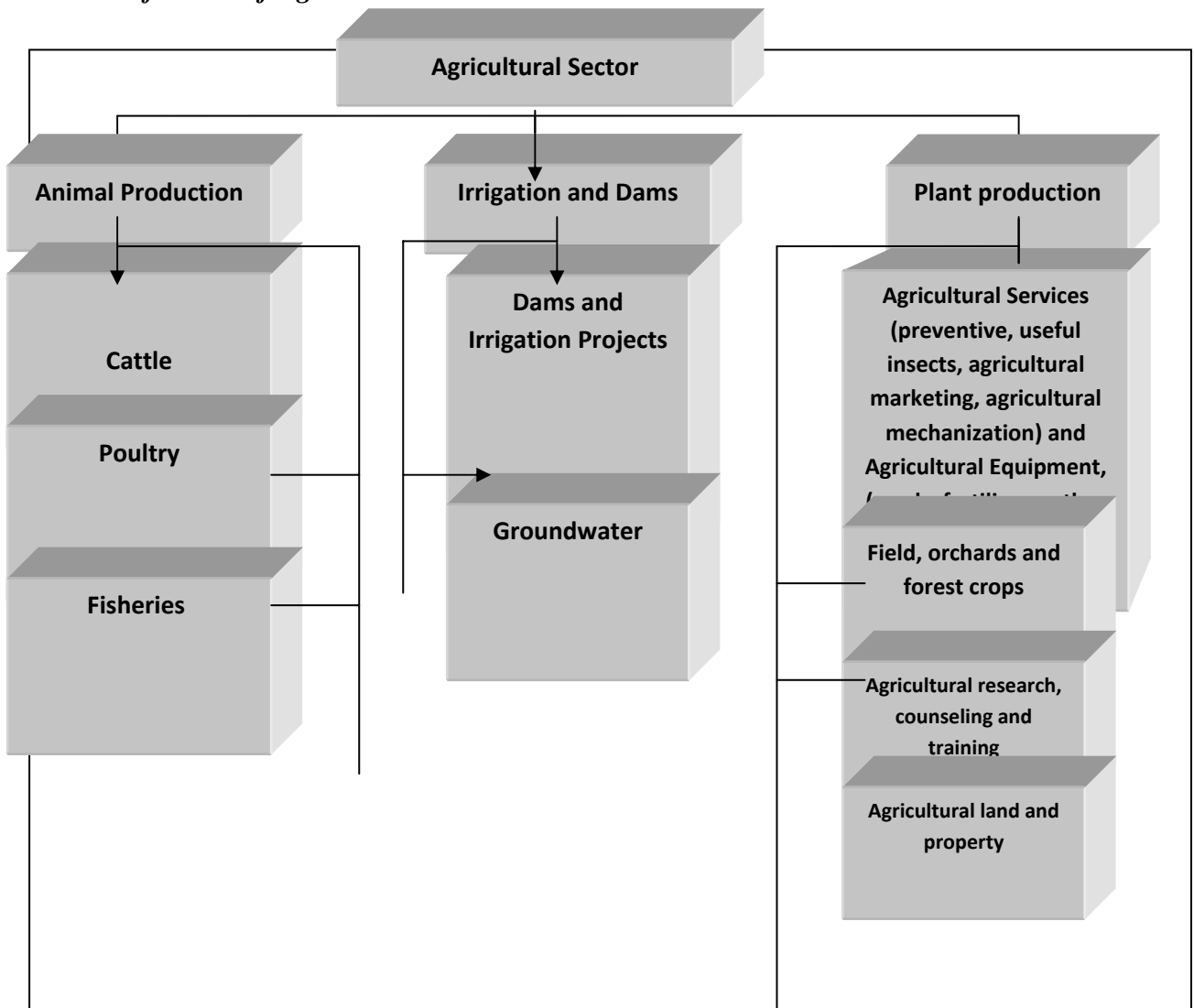
Rainfall, branches of the Tigris River, and groundwater account for the water sources in Kurdistan.

*Methodology*

*Major Partners*

1. Iraqi Businessmen Union-Kurdistan.
2. Kurdistan Economists Union
3. ASK Organization
4. University professors and agriculture specialists
5. Experienced farmers

*Classification of Agriculture*



## ***Problems and Proposed Solutions***

### *Agriculture-Based Industrial Projects*

<b>Problems</b>	<b>Proposed Solutions</b>
<ul style="list-style-type: none"> <li>▪ Lack of agricultural enterprises and firms that depend on local agricultural products.</li> <li>▪ Difficulty for the private sector to establish agricultural enterprises.</li> <li>▪ Difficulties in private investments.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Set up firms and factories that depend on local agricultural products.</li> <li>▪ Provide the private sector with the necessary facilities.</li> <li>▪ Implement the Investment Law.</li> <li>▪ Conduct a fertility survey to identify suitable soils for different crops for domesticating agricultural industries.</li> <li>▪ Promote the setting up of small-field farming enterprises.</li> </ul> <p><b><u>Stakeholders:</u></b> Ministry of Agriculture</p>

### *Fertilizers, Insecticides, and Agricultural Requirements*

<b>Problems</b>	<b>Proposed Solutions</b>
1. Scarcity and high prices of chemical fertilizers, seeds, insecticides, and other agricultural requirements.	<ul style="list-style-type: none"> <li>▪</li> </ul>
2. The insufficient methods used to combat harmful insects.	<p>2. Set up specialized laboratories to identify plant diseases and adopt the IPM (Integrated Pest Management) system.</p> <p><b><u>Stakeholders:</u></b> Ministry of Agriculture</p>
3. Underdeveloped agricultural mechanization in the region, unavailability of spare parts and the fact that they are unsuitable for the conditions in the region.	<p>3. Proposed solutions:</p> <ul style="list-style-type: none"> <li>▪ An integrated plan to facilitate importing modern agricultural machinery that suits the natural conditions of Kurdistan and ensure the availability of spare parts.</li> <li>▪ Encourage importers, manufacturers, and investors to become agents for world-renowned agricultural machinery companies, and provide farmers with financing on easy terms.</li> </ul> <p><b><u>Stakeholders:</u></b> Ministry of Agriculture Ministry of Industry</p>

	Investment Commission
--	-----------------------

*Agricultural Land and Forests*

<b>Problems</b>	<b>Proposed Solutions</b>
1. Limited agricultural land and the presence of urban development projects on arable lands.	<p>1. Proposed solutions:</p> <ul style="list-style-type: none"> <li>▪ Cultivate the largest possible area of arable land.</li> <li>▪ Effective enforcement of the Agricultural Products Protection Law.</li> <li>▪ Reclaim rocky, non-arable lands and use them to cultivate rain-fed fruit trees.</li> </ul> <p><b><u>Stakeholders:</u></b> Ministry of Agriculture</p>
2. Forests of the region are deteriorating and suffering from weak management and development.	<p>2. Develop and expand existing forests, stress the ban on cutting trees, protect wildlife, and issue an environmentally friendly hunting law that suitable to the conditions in the region.</p> <p><b><u>Stakeholders:</u></b> Ministry of Agriculture Ministry of Environment.</p>

*Animal Resources*

<b>Problems</b>	<b>Proposed Solutions</b>
1. In Kurdistan, animal resources in general, and livestock in particular, suffer from the absence of scientific means for treatment, vaccination, veterinary services, and artificial insemination.	<p>1. Improve the governmental body in charge of providing modern technology for treatment, vaccination, veterinary services, and artificial insemination since private institutions are currently incapable of shouldering this large task due to the lack of investment and commercial agencies for producers of such technologies. Their absence has a negative impact on the sustainability of this resource.</p> <p>Utilize available international assistance to develop current breeds and bring in what is needed.</p> <p><b><u>Stakeholders:</u></b> Ministry of Agriculture.</p>
2. Insufficient attention given to the development of natural pastures.	2. Enact laws that regulate pastures, ban arbitrary grazing, and take the necessary measures to remove landmines that obstruct grazing and harm shepherds and their property.

	<p><b><u>Stakeholders:</u></b> Ministry of Interior Ministry of Agriculture</p>
<p>3. Obtaining proteins, vaccination, and pullets at competitive prices for poultry is aggravating. For example, the price of one pullet for producers amounts to the cost of more than 1 kg of Brazilian chicken, which makes it impossible for local poultry farmers to be profitable.</p>	<p>3. Study poultry problems, particularly those related to obtaining proteins, vaccination, and pullets, and reach a comprehensive common approach with the private sector toward the future of the poultry industry in the region amid global competition</p> <p>Implement outcome of discussions in a manner that enables the sector to restore some of its competitiveness in the region's markets.</p> <p><b><u>Stakeholders:</u></b> Ministry of Agriculture</p>
<p>4. Dumping unreasonably low-priced, imported poultry into the local markets has resulted in the closure of many poultry enterprises in the region.</p>	<p>4. There is an urgent need for enacting a law that protects local producers from the risk of dumping. Assign specialized committees, with the participation of the private sector, to conduct a study on the price and cost structure of producers who market their products in the Region's markets.</p> <p><b><u>Stakeholders:</u></b> Ministry of Agriculture, Regional Parliament</p>

### *Marketing Services*

<b>Problems</b>	<b>Proposed Solutions</b>
<p>1. Weak marketing and logistical services (agricultural transport and storage) leads to the perishing of much of the crops before they reach their destination market. An example is the good quality Berwari apples, which become spoiled because of marketing and delivery problems.</p>	<p>1. Proposed solutions:</p> <ul style="list-style-type: none"> <li>▪ The public sector must develop a road and transportation system beneficial to agricultural products, and promote and activate marketing institutions.</li> <li>▪ Provide the necessary facilities to private sector investors to build different storage facilities (sheds, closed warehouses, cooler and freezer warehouses and silos). The state should invest whatever funds are available and provide services to develop the private agricultural sector.</li> <li>▪ Build modern wholesale markets that provide all necessary services for</li> </ul>

	<p>agricultural marketing operations.</p> <ul style="list-style-type: none"> <li>▪ Provide agricultural loans at governmental banks to farmers and agricultural companies for marketing purposes.</li> </ul> <p><b><u>Stakeholders:</u></b>  Ministry of Agriculture  Ministry of Finance  Ministry of Municipalities</p>
--	---

*Scientific Research*

<b>Problems</b>	<b>Proposed Solutions</b>
1. There is weak coordination between research centers at the regions' universities and real problems of productivity and modes of production in the region.	1. Focus research on applied aspects, related to problems and obstacles impeding the development of production and productivity of the agricultural sector in the region. This should include the introduction of new types and breeds and setting up fully-equipped research centers.

*Human Resources*

<b>Problems</b>	<b>Proposed Solutions</b>
1. The local residents' lack of knowledge about the means of modern agriculture and the absence of a clear role for agricultural counseling programs.	<p>1. Formulate a strategic plan for agricultural counseling in order to implement advanced programs and motivate the private sector to set up research guidance centers.</p> <p><b><u>Stakeholders:</u></b>  Ministry of Agriculture</p>
2. The lack of experience of many governmental officials working in agricultural management, particularly in modern technology.	<p>2. Enroll agriculture officials in regular, specialized courses and establish communication with research and information technology centers in order to enhance their experience.</p> <p><b><u>Stakeholders:</u></b>  Ministry of Agriculture  Ministry of Higher Education</p>
3. Emigration from rural to urban areas, because of the attractive lifestyle of the cities and benefits of employment, drained many rural areas of their competent workforce.	<p>3. Provide basic services in rural areas and minimize the gap between urban and rural in order to transform rural residents into an agricultural workforce, and thus transform them from consumers to producers.</p> <p><b><u>Stakeholders:</u></b>  Ministry of Agriculture</p>

	Ministry of Planning.
--	-----------------------

*Water Resources and Weather Forecast Stations*

<b>Problems</b>	<b>Proposed Solutions</b>
1. Not exploiting available water resources (rivers and groundwater) in an economical manner; the existence of problems related to irrigation methods, including pumps, fuel, and spare parts; the problem of drought and lack of rainfall, and its impact on cultivating grain crops.	<p>1. Economic use of available water resources; constructing dams, and irrigation projects on rivers.</p> <p>Setting up reserve irrigation networks in grain fields for use in times of low rainfall, and planned digging of underground wells.</p> <p>Encourage the cultivation of coarse grains in guaranteed rainfall areas and soft grains in non-guaranteed rainfall areas, and enact legislation to facilitate and regulate these measures.</p> <p><b><u>Stakeholders:</u></b> Ministry of Agriculture</p>
2. The lack of advanced weather forecast stations linked to international stations, which makes weather forecasting and identification of trends difficult.	<p>2. Construct modern and advanced weather forecast stations in different areas of the region that provide the necessary information for farmers to benefit from the changes.</p> <p><b><u>Stakeholders:</u></b> Ministry of Environment</p>
3. The problems caused by the variation of rainfall in rain-fed land.	<p>3. The gradual transformation of rain-fed land into irrigated land for the purpose of achieving complementary irrigation (by constructing a series of dams and agricultural canals).</p> <p><b><u>Stakeholders:</u></b> Ministry of Agriculture Ministry of Irrigation</p>

*Irrigation*

<b>Problems</b>	<b>Proposed Solutions</b>
1. Underdeveloped irrigation systems	<p>1. Proposed solutions:</p> <ul style="list-style-type: none"> <li>▪ Adopt water-harvesting technologies in rainy areas for limited agricultural and human use in order to ensure human settlement in the area.</li> <li>▪ Exploit the pressure of waterfalls from mountainous areas in Kurdistan, either by setting up a pipe network of varying diameters or lined canals, to</li> </ul>

	<p>irrigate arable land.</p> <ul style="list-style-type: none"><li>▪ Implement a pilot project for designing water networks for use in modern, successful sprinkler and dripper irrigation technologies, and replicate the program in other areas.</li><li>▪ Encourage investment companies or individuals to import successful sprinkler and dripper irrigation systems, granting long-term credit facilities to farmers—which is beneficial to investors and end-users. The goal should be to have these systems manufactured locally in the future.</li><li>▪ Specialized investment companies should set up new pumping stations or rehabilitate old ones and should receive fees that vary according to the nature of agricultural use.</li><li>▪ Set up mobile maintenance workshops for existing and future pumps and irrigation equipment to provide continuous services in return for generous fees.</li><li>▪ Agricultural and governmental banks should grant soft loans to farmers who wish to purchase sprinkler and dripper irrigation systems.</li><li>▪ Exploit groundwater, particularly renewable groundwater sources, for cultivating animal feed that may be either exported or used by local livestock enterprises.</li><li>▪ Set up irrigation systems in guaranteed, semi-guaranteed, and non-guaranteed rainfall areas in order to provide irrigation water during the summer.</li><li>▪ Adopt the use of a well with a large water reservoir and a unified pump to provide for the needs of more than one core workshop, hence reducing costs and increasing production.</li><li>▪ Exploit groundwater, shallow wells, and artesian wells. Since these represent the strategic reserves of the region, there is a need to utilize the water from shallow wells.</li></ul>
--	--

	<p><b><u>Stakeholders:</u></b>  Ministry of Agriculture  Ministry of Irrigation  Ministry of Finance</p>
--	--

*Seeds*

<b>Problems</b>	<b>Proposed Solutions</b>
<p>1. Low level of inspection and approval of seeds that farmers receive from the state; adoption of primitive methods mostly based on personal assessment.</p>	<p>1. Proposed solution:</p> <ul style="list-style-type: none"> <li>▪ Encourage the private sector to establish firms for the purification of fixed seeds.</li> <li>▪ Provide mobile seed purifiers.</li> <li>▪ Encourage the construction of modern silos for storing seeds.</li> </ul> <p><b><u>Stakeholders:</u></b>  Ministry of Agriculture  Ministry of Industry</p>

*Legislation and Measures*

<b>Problems</b>	<b>Proposed Solutions</b>
<p>1. Absence or inadequacy of current laws to regulate agricultural operations and property, causing many problems and market instability.</p>	<p>1. Proposed solutions:</p> <ul style="list-style-type: none"> <li>▪ Modernize existing laws to conform to economic development needs.</li> <li>▪ Enact laws to protect products and consumers, combat dumping, provide economic protection, and regulate fishing and the use of natural resources.</li> </ul> <p><b><u>Stakeholders:</u></b>  Ministry of Agriculture  Ministry of Trade</p>
<p>2. Weak agricultural quarantine measures in border areas result in the entry of undesired products or pests that often afflict plants in the region.</p>	<p>2. Consider establishing agricultural quarantine centers at border crossings and airports that are equipped with the necessary laboratory equipment to test agricultural products, seeds, and seedlings, and set up one central laboratory for conducting accurate tests and analyses on agricultural products. In the same context, there is a need to encourage the establishment of a number of private scientific and research laboratories.</p> <p><b><u>Stakeholders:</u></b>  Ministry of Agriculture  Ministry of Finance  Ministry of Planning</p>

## **Challenges and Aspirations**

### *Challenges*

The massive scale of agricultural business and activities and the amount of overlap with other sectors were major factors in the development of the challenges currently faced by the agricultural sector. The main challenge continues to be the diversification of the sector's sources of income and exploiting its enormous, neglected, and wasted production capacity. This has a direct impact on the lives of people. For this sector to spearhead the strategic shift from consumption to production, it will inevitably face other challenges related to relevant sub-sectors such as strategic industries that rely on agriculture, optimal land use in favor of agriculture, and attention to forests, mechanization, fertilizers, and seeds. Another challenge is human resource development, where residents, including rural women and rural youth, should be encouraged to settle and work in agriculture. Consequently, developing the agricultural sector is an extremely important, top priority that requires analysis and contemplation until a long-term, modern program is formulated in order to move the sector toward a level that is commensurate with available resources, organization, and care.

### *Aspirations*

In a region like Kurdistan, where all inhabitants descend from agricultural communities and families, and the whole of society is aware of the sector's capacity to generate income and provide a livelihood, the private sector wishes for the state to act proactively. It also hopes that all principal parties collaborate to formulate a flexible, long-term strategy, and that they embark on testing, analysis, and research in order to support the private agricultural sector, so that it advances towards a new era of competition based on science and technology.