



Problems Facing Potato Farmers in the Field of Production and Marketing in the Kurdistan Region of Iraq

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Abstract

Agricultural sector has faced some obstacles and problems in the Kurdistan Region of Iraq (KRG), therefore, a huge number of rural residents have migrated to urban areas because of lack of work opportunities, agricultural technologies, and product marketing problems. This research was conducted in the KRG to find out the importance of current problems related to potatoes production and marketing process in the KRG according to priority; the research population included all potato farmers who were (790 farmers), and the research sample was taken by stratified random sampling comprised (257 farmers) in seven districts, after excluding (22 farmers) for the pre-test. The data were collected using questionnaires, the questionnaire was sectioned into two main parts, the first part was to study the farmers' socio-demographic profile, and the second part was designed to find out the importance of current problems related to the process of potatoes production and marketing, and the farmers were interviewed face-to-face, afterward, the collected data were analyzed by Statistical Package for Social Science (SPSS version 25). The result shows that most of the farmers suffered from these five significant issues (Absence of state support for exporting potatoes, High price of fertilizer, importing potatoes from abroad, High price of seeds, and High price of pesticides), It implies that the problems were related to the government. Accordingly, governments must play a crucial role in supporting farmers and ensuring the availability of affordable agricultural inputs to assist farmers.

Key words: potatoes, marketing, agricultural problem, farmer, agricultural extension.

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Introduction

The potato (*Solanum tuberosum* L.) is an important crop worldwide. Furthermore, it is the most significant root and tuber crop in the world. Potatoes have become a valuable crop for millions of farmers in developing countries due to their nutritional value and easy production, making them important for food security and economic growth [1]. Thus, potato is becoming recognized as an essential food-security crop and as an economical alternative to costly grain imports [2]. Compared to cereal farming, potato farming yields substantially higher-value crops per hectare, however, price and revenue variations are much more unpredictable for potato growers [3]. Agriculture's ability to feed millions of people and its contribution to the economy has been severely harmed by misguided "modernist" policies, violent conflict, war, and low-cost food imports. Consequently, ignoring families who are practicing farming, which represents the human side of agriculture, is continuously causing a high-risk strategy from an economic and environmental standpoint, which could further reduce the sector's capacity to supply food to the local market [4, 5, 6]. Although local policymakers, the global community, and international organizations highlight the potential of agriculture for food production and offering job opportunities as well as raising income, they frequently view the current food system as problematic due to the alleged low productivity that they associate with the current smallholder system [4]. It is also evident that rural areas undergo a period of change and transformation in terms of their social, economic, functional, geographical, and identity systems [7]. In the KRG, the agriculture and water resource sectors have been negatively impacted by some unfortunate and devastating occurrences, including war, political conflicts, and unfavorable national and international policies, unfortunately, several cases that occurred in the years around the 2003-Iraqy war led to a considerable drop in agriculture and food production [8]. Iraq and the KRG have become major food importers over the last decades. The migration of people from rural to urban regions was the biggest

difficulty facing KRG's rural areas [9]. Agriculture in the KRG is characterized by its low productivity due to a variety of factors, including the use of antiquated farming techniques and a failure to match agricultural production with the most favorable environmental conditions as a result of the land being lost to urbanization, agricultural areas are in danger [10]. In KRG, farmers suffer from diverse problems, some of them related to the government policy and others to the responsibility of the Ministry of Agriculture, especially the agricultural extension, which can discover these problems as one of the major works of the agricultural sector through planning and designing a detailed program for solving them, since extension programs should be built according to farmers' necessities. Diagnosing the problems and determining the farmers' needs are considered to be one of the most important pillars of success in creating an extension program [11]. Agricultural extension assists farmers in learning to face their significant problems. Agricultural extension is a method of education that aims to provide farmers with relevant information and teach them to apply the resources available to them to handle their problems [11, 12]. Agricultural extension is one of the key elements in developing smallholder capacity and encouraging the accelerated use of technology, which positively links to farm productivity [13]. Moreover, it works with farmers as a team. Farmers' participation in the rural development programs enables them to enhance their skills throughout the whole stages of the programs [12]. In the KRG, farmers may struggle to market their products if they don't consider consumers' demands. Additionally, potato farmers may lack the necessary information to produce high-quality potatoes, such as proper soil and seed preparation, planting techniques, pest control, and post-harvest processes. Inadequate management and a lack of extension programs exacerbate these issues, as farmers need access to sufficient information to improve their products and sustainability.

Research Questions:

This research was conducted to answer the following research questions;

1. What are the personal characteristics of potato growers in the KRG?
2. What are the problems facing potato farmers in the field of production and marketing in the KRG?
3. What is the importance of the problems facing potato farmers in the field of production and marketing in the KRG?

Research Objectives:

1. Identify the personal characteristics of potato farmers in the KRG.
2. Determine the problems facing potato farmers in production and marketing in the KRG.
3. Arranging the problems facing potato farmers in production and marketing in the KRG according to their importance.

2. Materials and Methods:

2.1 Methodology and Research Area: the descriptive methodology was used to acquire reliable and accurate information from social reality and contribute to understanding its phenomena to fulfill the researcher's goal [14]. The research was carried out in the KRG. This Region is a semi-autonomy region located in northern Iraq [15].

2.2 The research population and sample: the research population included all farmers who produced potatoes in the KRG, they were (790)* farmers that were divided into (Erbil, Sulaimani, Duhok, and Halabja) governorates. The research sample was taken by stratified random sampling, including (235 farmers) in seven districts.

2.3 Data Collection Instrument: the data were collected using questionnaires, and the farmers were interviewed face-to-face. The questionnaire was sectioned into two main parts, the first part was to study the socio-demographic profile of the respondents, and the second part was the study's main objective to find out the importance of current problems related to potato production and marketing.

2.3.1 Validity: the questionnaire was presented to (22) experts who were specialists in vegetable crops, agricultural extension, and

psychology to determine the questionnaire's content validity and face validity.

2.3.2 Reliability: to determine the reliability of the questionnaire, the pre-test was conducted on a small group of respondents with (22) potato farmers from February 26 to March 4, 2022, in various places of (Erbil, Sulaimani, Duhok, and Halabja) governorates, the Sperman-Brown formula was used to measure the reliability of the questionnaire parts, the value of Sperman-Brown of part two of the questionnaire was above (0.70) which indicated high reliability, and it was accepted to the last form of the questionnaire.

2.4 Data Collection and Analysis: the study data were collected from (235) respondents in the targeted area from March 26 to August 5, 2022. The data were analyzed by Statistical Package for Social Science (SPSS version 25). The data distribution followed the normal distribution; accordingly, parametric statistical methods were utilized to analyze the research data, which were Sperman-Brown, frequency, percentage, arithmetic means, and percent weight.

* Data of the Ministry of Agriculture and Water Resources in the KRG, 2021.

3. Result and Discussion:

3.1 Socio-demographic Characteristics of Potato Farmers

According to the findings, the respondents were aged 17 to 74, the largest proportion of farmers (42%) belong to the age group (41-52), as illustrated in (Table 1). Most of the farmers in the targeted area (28%) had studied centrally, and only (7% and 9%) of the farmers had institute and bachelor degrees respectively. Most of the farmers (62%) had a working experience of less than 10 years, and only (5%) had more than (21) years of experience working in potato production. The highest portion of farmers (55%) had farms with (100 donum or less). The majority of farmers (76%) had farms of potatoes (100 donum or less), and only (2%) of them were included in the fourth category with farms (301-400 donum). The data indicated that the highest portions of the farmers (45%) belong to the land rent category, and the lowest segment of farmers (5%) belong to the land partnership category. Most of the

farmers produced plenty amount of potatoes for one ton of seeds about (41%) of them yielded (16-22 Ton potatoes). The majority of farmers (62%) bought seeds from abroad, followed by (31%) of farmers who produced the seeds themselves, and the least of them (8%) bought seeds from other farmers. While seed is a

crucial component of crop production. And (61%) of farmers have not participated in any training courses regarding planting and marketing potatoes, and only (39%) of farmers had, although, farmers can receive a great deal of information through training classes.

Table 1. Distribution of potato farmers according to socio-demographic profile

Variables	Categories	Frequency	Percentage
Age of farmers	17-28	17	7
	29-40	70	30
	41-52	99	42
	53-64	44	19
	65-76	5	2
	Total	235	100
Educational Background	Illiterate	36	15
	Read and write	19	8
	Primary School	60	26
	Centrally	66	28
	High School	17	7
	Institute	17	7
	Bachelor	20	9
Total	235	100	
Working years in potato production	1-10	145	62
	11-20	78	33
	21-30	12	5
	Total	235	100
Farm Size	1-100 Donum	129	55
	101-200 Donum	45	19
	201-300 Donum	29	12
	301-400 Donum	10	4
	401 Donum and more	22	9
	Total	235	100
Utilized land for potato planting	1-100 Donum	178	76
	101-200 Donum	28	12
	201-300 Donum	12	5
	301-400 Donum	4	2
	401 and more	13	6
	Total	235	100
Type of acquisition	Contract	32	14
	Partnership	12	5
	Rent	106	45
	Ownership	85	36
	Total	235	100
Yield amount/ton of potatoes	2-8	65	28
	9-15	74	31
	16-22	96	41
	Total	235	100
Location of seed source	Other farmers	18	8
	Abroad	145	62
	Personal product	72	31
	Total	235	100
Participation in training courses	Participated	90	38
	Not-participated	145	62
	Total	235	100

3.2 The importance of current problems related to the process of production and marketing potatoes in the KRG

The problems related to the process of production and marketing potatoes in the KRG,

which were (16 problems), obtained weighted averages ranging between (2.35-2.93) degrees, and with the percent weight between (78.3-97.7%), which were arranged in descending order, as shown in (Table 2).

Table 2. Problems related to the process of production and marketing of potato crops

Problems	Rank	Mean	Percent Weight %
Absence of state support for exporting potatoes	1	2.93	97.7
High price of fertilizer	2	2.90	96.7
Importing potatoes from abroad	3	2.89	96.3
High price of seeds	4	2.86	95.3
High price of pesticides	5	2.85	95
Absence of plans and good management by the Ministry of Agriculture and the agricultural directorates	6	2.84	94.7
Not importing healthy and reliable seeds by reliable companies	7	2.79	93
Lack of information and expertise in the way to store potatoes properly	8.5	2.73	91
Not providing pesticides by the Ministry of Agriculture to farmers for reducing the damages	8.5	2.73	91
Lack of contact between agricultural extension institutes and farmers	10	2.72	90.7
Absence of enough agricultural technologies for planting, harvesting, and collecting potatoes	11	2.71	90.3
Absence of cooling storage for storing potatoes in areas close to fields	12	2.65	88.3
Lack of special expertise in the packaging process	13	2.47	82.3
Lack of transportation accessibility	14	2.4	80
High price of labor	15	2.37	79
A large number of wounded potatoes and infected with a disease	16	2.35	78.3

The problems were arranged according to their mean values, as in (Table 2), all of the relevant problems had average significant scores between (2.35 to 2.93) with limited scores (1-3) and percent weight of (78.3 to 97.7), suggesting that farmers in the targeted area experienced all of these problems throughout the process of producing and marketing potatoes. The results show that five significant issues affected the production and marketing of potatoes in the targeted region which were (Absence of state support for exporting potatoes) with an average of (2.93) and a percent weight of (97.7%), followed by the problem of (High price of fertilizer) with an average of (2.90) and a percent weight of (96.7%), (Importing potatoes from abroad) with an average of (2.89) and a percent weight of (96.3%), (High price of seeds) with an average of (2.86) and a percent weight of (95.3%), (High price of pesticides) with an average of (2.85) and a percent weight of (95%). Based on the findings the high price

requirements of potato production and lack of support from the government were the most important problems facing farmers, furthermore, potato farmers often struggle with fluctuating market prices for the yield of the crops. Unlocking the market's potential and overcoming market failures requires an understanding of the obstacles smallholders faced in gaining access to markets and their marketing effectiveness when they take part in agricultural value chains [12]. It implies that the first five problems were related to the government.

Conclusion:

To sum up, the government is frequently responsible for many farmers' difficulties. Small-holder farmers may experience considerable economic difficulties as a result of the high costs of inputs including seeds, fertilizer, and equipment. When farmers are unable to pay for these supplies, it can reduce their output and lead them to think about giving

up farming altogether. Therefore, governments must play a crucial role in supporting farmers and ensuring the availability of affordable agricultural inputs to assist farmers in boosting their economic life and relieve the agricultural sector in this region.

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المشاكل الإنتاجية والتسويقية التي تواجه مزارعي البطاطا في إقليم كردستان – العراق

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• البحث مستل من رسالة دكتوراه للباحث الأول

المستخلص

واجه القطاع الزراعي في إقليم كردستان العراق بعض المعوقات والمشاكل التي ادى الى تهجير عدد كبير من سكان الريف إلى المناطق الحضرية بسبب نقص فرص العمل والتقنيات الزراعية في تسويق المنتجات الزراعية. استهدف البحث التعرف على أهمية المشاكل الحالية المتعلقة بإنتاج البطاطا وعملية تسويقه في إقليم كردستان العراق، شمل مجتمع البحث جميع مزارعي البطاطا في اقليم كردستان البالغ عددهم (790 مزارعاً)، وأخذت عينة عشوائية طبقية مكونة من (257 مزارعاً) في سبع مناطق، بعد استبعاد (22 مزارعاً) للاختبار الأولي، تم جمع البيانات باستخدام استمارة استبيان و بطريقة المقابلة الشخصية وتكونت الاستمارة من جزئين ، الجزء الأول يشمل الخصائص الشخصية والاجتماعية للمزارعين ، والجزء الثاني صمم لمعرفة أهمية المشاكل الحالية المتعلقة بعملية زراعة البطاطا في اقليم كردستان ، وتمت عملية جمع البيانات عن طريق المقابلة الشخصية وبعد تفريغ البيانات وتصنيفها تم استخدام برنامج SPSS. اظهرت نتائج البحث أن معظم المزارعين يعانون من المشكلات (غياب دعم الدولة لتصدير البطاطا، ارتفاع أسعار الأسمدة، استيراد البطاطا من الخارج، ارتفاع أسعار البذور، ارتفاع أسعار المبيدات)، وبناءً على ذلك يوصى الباحثان الحكومة المحلية بدعم المزارعين في توافر المدخلات الزراعية بأسعار معقولة.

الكلمات المفتاحية: محصول البطاطا، تسويق، المشاكل الزراعية، المزارع، الارشاد الزراعي.