

*Full Length Research Paper*

# Multifunctionality of Iran's Agriculture: A researchers' perspective

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**The main purpose of this descriptive enquiry was to investigate Kermanshah's agricultural researchers' opinions towards multifunctionality of Iran's agriculture. Multifunctionality as a term was invented to sum up diverse aspects of agriculture in an attempt to be systemic and prevent potential conflicts and damages caused by reductionist interventions in this area. A total of 105 researchers were selected through a process of stratified random sampling and its face- and content validity was established by a panel of experts. Reliability of the instrument was calculated using Cronbach's alpha and proved to be at 0.88. Data were collected and analyzed by SPSS software. Generally speaking, production was emphasized on to be currently the most important functionality of Iran's agriculture, far greater than environmental or even cultural issues, according to researchers' opinions.**

**Key words:** Multifunctionality, agriculture, Iran, opinions.

## INTRODUCTION

It goes without saying that agriculture plays various functions in our life today. Even history shows that political and economical stability of nations has always been so dependent on it. The point is those different functions of agriculture and the way they influence a nation, internally and in its relation with other countries has always been a controversial issue.

Traditionally, agriculture is known for its role in producing food and fiber; whereas multifunctionality of agriculture was first introduced to put more emphasis on other functions of agriculture mainly cultural, economical, social, environmental and educational dimensions. It was aimed at a fair and sustainable redistribution of agricultural benefits amongst all its stakeholders.

Agricultural modernization in last 60 years has introduced new constraints on this sector (Van Huylenbroeck, 2006):

firstly, *market restrictions*- a considerable production increase meant oversupply, and forced producers to look for new hard-to-find international markets; secondly, *environmental restrictions*- a significant boost in use of chemicals created unprecedented problems of its own even threatening our own very existence; and last not least *social restrictions*- a new set of challenges intimidating farmers' income and way of life. On the other hand, an implementation of economical liberalization plans in 1980s deeply affected developing countries; resulting in inequality amongst and inside these nations (Losch, 2004). Multifunctional agriculture (MFA) was coined in 1992 Rio Summit as a new paradigm for rural agricultural development with special emphasis on food security and sustainable development (De Vries, 2000).

The very definition of MFA has also been very divisive (Majkovič and et al., 2005). Marsden and Sonnino (2008) believe that besides producing secure supplies of food and fiber, our life quality itself is influenced by agriculture; particularly through affecting rural, environmental and recreational settings. Some functions of agriculture can be

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**Table 1.** Prioritizing production functionalities of Iran's agriculture (n=105).

Production functionalities	Very high	High	Moderate	Low	Very low	Mean	Sd
Food production	87.7	12.3	0	0	0	4.88	0.331
Animal foliage	49.3	32.9	15.1	2.7	0	4.32	0.78
Industrial raw material	27.4	32.9	23.3	16.4	0	3.75	1.04
Wood Fiber	23.3	28.8	28.8	12.3	6.8	3.49	1.18

labeled as negative like pollution and erosion and while some others are positive like spiritual value of protecting a nation's agricultural heritage (Torres et al., 2007). In general, supporters of MFA, apart from production of food and fiber, try to put more light on its other advantages as well; such as environmental beauties, food security, rural economy, stabilized communities, cultural heritage and spiritual/aesthetic values (Greenfield, 2006).

On what MFA is and what it is not, while differs from one country to another; has a direct effect on those countries' chosen policies and potentially could bring about various consequences. That is why its terminology is so important. For example, while France most important functions of agriculture are biodiversity and protection of beautiful landscapes and natural resources, those of the Netherlands are energy and natural habitats protection besides organic agriculture (Mittenzwei et al., 2007). In Ethiopia, biodiversity issues as well as protection of indigenous seeds and plants are their major functions of agriculture, which resulted in an introduction of Seed Industry Policy aimed at meeting farmers' needs and securing biodiversity (De Vries, 2000).

Now that it has been accepted that MFA can ensure social welfare of a society as a whole, an investigation and exploration of a particular country's agricultural functions plays a very crucial role in program planning, if their chosen strategies and plans of action need to be harmonious nation wide and internationally.

In Iran, Kermanshah is known to be a leading province in terms of agricultural activities where 900,000 hectares of farmland goes under cultivation each year creating job opportunities for almost a third of the provincial population (Bahraminejad, 2009).

Briefly speaking, how Kermanshah's mainstream researchers perceive current Iran's agricultural functions to be; major purpose of this study could highlight those dimensions of the enterprise which are under more pressure, pros and cons of existing developmental plans and how overall contributions of various rural agricultural stakeholders has impacted the agriculture as a whole. The results could be utilized as a turning point in introduction and implementation of future Iran's developmental plans paving the way for a more holistic intervention in rural areas. Such research can also be carried out in other developing nations, particularly in Africa to create a sound foundation for prospective plans of action instead of a blind imitation of Western methodologies.

## MATERIALS AND METHODS

In terms of research methodology, such descriptive research is classified in the category of mainstream quantitative scientific enquiry. According to the table introduced in Bartlett et al. (2001), a total sample size of 105 respondents were selected using stratified random sampling; out of a total population of 132 agricultural experts. Target group of the study was comprised of 52 academics from Agricultural Faculty of Razi University, 58 researchers from Center for Research on Agriculture and Natural Resources, and 22 experts from Saravard Center for Research on Dry Farming, all three were located in Kermanshah province. A questionnaire was designed consisting of both open and close-ended questions, face and content validated by a panel of experts. Reliability of the instrument in close-ended part of the questionnaire was secured after collating and analyzing data of the pilot study; using Cronbach's alpha proved that to be 0.88. Open-ended questions were analyzed using Barry's technique (Barry, 1998).

## RESULTS AND DISCUSSION

Data analysis showed that 43, 53 and 4% of the respondents had received qualifications at Doctorate of Philosophy, Master of Science and Bachelor of Science; respectively, across many disciplines of agriculture.

Table 1 demonstrates agricultural researchers' prioritization of diverse production functionalities of Iran's agriculture.

As shown above, production of food for both humans and livestock labeled as the highest and that of wood fiber as the last priorities of Iran's agriculture.

Table 2 displays economical functionalities of Iran's ranked by experts; while Table 3 reveals cultural functionalities of Iran's agriculture graded by researchers from the most to the lowest based on their importance.

Table 4 illustrates social functionalities of agriculture as perceived and evaluated by Kermanshah's agricultural researchers. Results showed that producing healthy food and food security were mentioned as the highest priorities of Iran's agriculture, while protecting rural lifestyle and encouraging a cooperative living amongst rural population graded as the lowest.

A prioritization of environmental functionalities of Iran's agriculture has been exemplified in Table 5. According to the table, Iran's highest priorities of agriculture in this dimension are providing beautiful landscapes besides protecting wildlife and biodiversity; while agriculture functioning as an opportunity for ecotourism or a threat for the environment discovered to be the least.

Kermanshah agricultural researchers outlined only one

**Table 2.** Prioritizing economical functionalities of Iran's agriculture (n=105).

Economical functionalities	Very high	High	Almost	Low	Very low	Mean	Sd
Employment	58.9	28.8	6.8	4.1	1.4	4.4	.89
Income	48.6	34.7	9.7	5.6	1.4	4.26	.93
Avocational	14	37.5	26.4	18.1	4.2	3.41	1.07

**Table 3.** Prioritizing cultural functionalities of Iran's agriculture (n=105).

Cultural functionalities	Very high	High	Almost	Low	Very low	Mean	Sd
Society's identity	33.8	28.2	26.8	9.9	1.4	3.83	1.04
Indigenous knowledge	19.2	34.2	30	13.7	2.7	3.53	1.04
Family farming	14.3	35.7	25.7	12.9	11.4	3.28	1.18
Costumes and Traditions	16.9	28.2	28.2	14.1	12.7	3.22	0.89
Religious values	11	20.8	41.7	12.5	13.9	3.02	1.15

**Table 4.** Prioritizing social functionalities of Iran's agriculture (n=105).

Social functionalities	Very high	High	Almost	Low	Very low	Mean	Sd
Healthy food	70	25	1.4	2.8	0	4.63	0.65
Food security	52	29.6	14	2.8	1.4	4.28	0.9
Cooperative lifestyle	25	36	26.4	11	1.4	3.72	1
Rural lifestyle	23	42	21.7	8.7	5.8	3.65	1.06

**Table 5.** Prioritizing environmental functionalities of Iran's agriculture (n=105).

Environmental functionalities	Very high	High	Almost	Low	Very low	Mean	Sd
Beautiful landscapes	27.4	31.5	24.7	8.2	8.2	3.62	1.21
Wildlife and biodiversity	26.4	33.3	20.8	5.6	13.9	3.5	1.32
Ecotourism	9.6	28.8	32.9	17.8	11	3.1	1.13
Environmental pollutant	21.1	16.9	28.2	14.1	19.7	3.05	1.38

educational functionality for agriculture; meaning that agricultural farms could potentially provide appropriate settings for farmers' education.

Diverse functions of agriculture including some of their mentioned potentials and impacts on a number of issues such as production, economic, culture, society, environment and education have been encapsulated in Table 6; in which a descending ranking shows their importance in Iran's agriculture from the highest to the lowest.

Briefly speaking, Table 6 shows that researchers under investigation perceived producing healthy food and providing proper employment for a rising population as major functions of Iran's agriculture; while environmental and cultural functionalities of Iran's agriculture placed at the end of table, revealing this striking reality that these items were not as important for the target group, a sample from the elite of agricultural society. When they were asked to rank above-mentioned dimensions of agriculture according to their importance and potential

developmental capacity, almost the same results were revealed, only adding to the element of surprise. Again, production came first and environment as the last in the list, showing an educational gap even for top Iranian researchers and academia.

## Conclusion

In this paper, multifunctional agriculture (MFA) was introduced as a way to reconcile diverse functions of agriculture in an ever-changing world, towards a more sustainable future. It was mentioned that MFA from the very beginning appeared to be a controversial issue.

That is why, reaching a consensus on what the term means internationally, and also nationally amongst agricultural stakeholders, can potentially be a constructive step in harmonizing collective efforts of a nation, or of nations, towards constructing a better world for future generations.

**Table 6.** Prioritizing agricultural functionalities of Iran's agriculture (n=105).

Functions of agriculture	Functionality	Mean	Standard deviation	Rank
Food supply	Production	4.88	0.33	1
Healthy food	Social	4.63	0.65	2
Employment	Economical	4.4	0.89	3
Animal food	Production	4.32	0.78	4
Food security	Social	4.28	0.9	5
Income generation	Economical	4.26	0.93	6
Educational location	Educational	3.89	1.05	7
Rural cultural heritage	Cultural	3.83	1.04	8
Raw material	Production	3.75	1.04	9
Cooperative lifestyle	Social	3.72	1	10
Rural lifestyle	Cultural	3.65	1.06	11
Beautiful landscapes	Environmental	3.62	1.61	12
Indigenous knowledge	Cultural	3.53	1.04	13
Wildlife and biodiversity	Environmental	3.5	1.32	14
Wood fiber	Production	3.49	1.18	15

To achieve such goal, an exploration of currently active agricultural researchers' perspective in the area on various functions of agriculture seemed to be necessary. Present descriptive enquiry was designated and implemented afterwards. Results revealed that surprisingly, even for the elite of agricultural society production of healthy food besides provision of proper jobs were two major concerns of Iran's agriculture today and more striking was the fact that the researchers in a way had asked for more efforts in the domain of food production and job creation instead of an emphasis on environmental and cultural issues.

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## REFERENCES

Bahraminejad S (2009). Cultivation Chickpea in Sarpol-Zahab: an favorite experience and pattern in order to optimum use at Dry land. The National Conference on Consumption Pattern Reforms in Agriculture and Natural Resources. Kermanshah: Razi University.

- Barry C (1998). Choosing qualitative data analysis software: Atlas-ti and Nudist compared. *Sociological Research Online*, 3(3): 33-41.
- Bartlett JE, Kotrlik JW, Higgins CC (2001). Organizational Research: Determining Appropriate Sample Size in Survey Research. *Information Technology, Learning and Performance Journal*, 19(1): 43-50.
- De Vries B (2000). Multifunctional Agriculture in the International Context: A Review. The Land Stewardship Project.
- Greenfield D (2006). Multifunctionality of Agricultural Water, looking Beyond Food Production and Ecosystem Services. *Irrigation and Drainage*, (55): 73-88. Available at Website: <http://www.interscience.wiley.com>
- Losch B (2004). Debating the Multifunctionality of Agriculture: From Trade Negotiations to Development Policies by the South. *J. Agrarian Change*, 4(3): 336-360.
- Marsden T, Sonino R (2008). Rural development and the regional state: Denying Multifunctional Agriculture in the UK. *J. Rural Studies*, 422-431.
- Majkovič D, Borec A, Rozman Č, Turk J, Pažek K (2005). Multifunctional Concept of Agriculture: Just an Idea or the Real Case Scenario? *Društvo. Istraž*, 14: 579-596.
- Mittenzwei K, Fjellstad W, Dramstad W, Flaten O, Gjertsen AK, Loureiro M (2007). Opportunities and Limitations in assessing the Multifunctionality of Agriculture within the CAPRI Model. *Ecological Indicators*, 7: 827-838.
- Torres AC, Rojas NU, Torres JMC (2007). Multifunctionality Agriculture and Intergration of Framing Production Systems within Agribusiness Chains. *Rev. Fac. Agr. Medellin*, 60(2): 3839-3857.