Comparison of ecosystem services value of conventional and organic farms in Fariman city, Iran

*Naghmeh Mobarghaee Dinan, Mansoureh Mahlouji rad, Hooman Liaghati, Reihaneh Rasoolzadeh

**Contact Information:** N.mobarghaee@sbu.ac.ir

INTRODUCTION

Valuation of ecosystem services is one of the most effective ways to focus on these services and to help planners adopt appropriate approaches to sustain these services. Although organic farming concentrates on maintaining and protecting the ecological balances of agro-ecosystems, the share of organic agriculture is insignificant in Iran (less than 1%). Therefore, the present study aims to evaluate the value of agro-ecosystem services under two different conditions - conventional and organic management - in Fariman city located in northeastern Iran.

METHODS

The value of agro-ecosystem services was evaluated under two different management systems namely conventional and organic for wheat and potato according to three different scenarios.

In these scenarios it was assumed that 10%, 25%, and 50% of the conventional farm area (total cultivated area of wheat was 10,000 ha and of potato 800 ha) would be replaced by an organic production system.

Agro-ecosystem services were divided into two main groups:
1) market services (primary and secondary productions)
2) non-market services (pest control, soil production, carbon sequestration and soil fertility).

Note: Data is collected from executed experiments under real conditions during the growing seasons of 2011 and 2012.

RESULTS

From the results, the conventional potato system had a higher market value than the organic system ($3,000 Vs. $2,800), but the value of non-market services in the conventional system was less than for the organic one ($1,13.66 Vs. $2,800).

This study showed that organic management systems of potato and wheat farms provide more ecosystem services, especially non-market services, in comparison with conventional systems. However, in some cases, loss of yield and market value reduced the total value of organic agricultural services, but it should be noted that the movement towards organic and sustainable farming provides both market services as well as non-market benefits, such as environmental protection and healthy food production.

CONCLUSIONS

This study showed that organic management systems of potato and wheat farms provide more ecosystem services, especially non-market services, in comparison with conventional systems. However, in some cases, loss of yield and market value reduced the total value of organic agricultural services, but it should be noted that the movement towards organic and sustainable farming provides both market services as well as non-market benefits, such as environmental protection and healthy food production.

REFERENCES