



Tropentag, September 20-22, 2017, Bonn

“Future Agriculture:
Socio-ecological transitions and bio-cultural shifts”

Comparison of Ecosystem Services Value of Conventional and Organic Farms in Fariman City, Iran

NAGHMEH MOBARGHAEI DINAN¹, MANSOURE MAHLOUJI², HOUMAN LIAGHATI¹, REIHANEH RASOOLZADEH¹

¹*Shahid Beheshti University, Dept. of Environmental Planning, Iran*

²*Ferdowsi University of Mashhad, Dept. of Agronomy, Iran*

Abstract

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 locating in northeastern Iran. The presented data are based on implemented experiments under real conditions during the growing seasons of 2011 and 2012.

In this research, agro-ecosystem services were divided into two main groups; market services (primary and secondary production) and non-market services (pest control, soil production, carbon sequestration, supply of nutrients from the soil or soil fertility). The price of remained crops on the farm was considered as economic value of secondary productions as well.

The value of market and non-market ecosystem services in conventional and organic farms was evaluated 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. Finally, the differences between these scenarios were compared to the existing situation.

From the results, conventional potato system had a higher market value than the organic system, but the value of non-market services in the conventional system was less than for the organic one. Market and non-market values for wheat organic farms were higher than for conventional farms. So, the total value of ecosystem services in organic and conventional systems were about 260 and 106 \$ per ha and year, respectively.

Results illustrate that the value of non-market services rises along with the increasing area of organic farms. When 50 % of farm area is cultivated under organic system, total non-market values of potato and wheat will reach to 22960 and 186613 \$ per year, respectively. Finally, according to the results and obtained benefits, developing and promoting organic agriculture in Iran is extremely recommended.

Keywords: Market value, non-market value, organic agriculture, valuation