

POTENTIAL OF CONSERVATION AGRICULTURE PRINCIPLES AS RESPOND ON CLIMATE CHANGES IN CROP PRODUCTION

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Abstract

Questions about soil degradation and how can we prevent its degradation, today is one of the most important aspects of human existence on global, regional and especially on local levels. Soil is most vulnerable natural resources and its quality status directly and indirectly influence human possibilities in food production.

Climate change (CC) has usually negative impact on quality of soil and agricultural land and on its productivity potential on different way, level and intensity. Basically, soil degradation processes are the most visible as direct impact on its physical, chemical and biological properties, but also as indirect impacts with consequences mainly in social and economic aspects. "Usual" degradation processes such as: erosion, drought, decrease water holding capacity, loss of soil organic matter (SOM), decrease of biodiversity are additional aggravates by CC and leads to desertification. Unfortunately, each degradation process is closely connected with many others and usually influence them on many different ways.

Conservation agriculture (CA) is one of the most effective, the most useful and the most promising global platform (but also

on regional and local scale) as answer on CC in crop production. But really question is how does CA actually work?

CA is generally based on three interconnected and undivided pillars: a) soil mechanical disturbance in minimum, b) permanent soil surface cover with crop residues, c) crop rotation (species diversification + intercropping). With correct approach in application, (which means application of all these elements on proper / optimal way depending on agroecological conditions) it is possible to achieve and ensure the optimal conditions in crop production. This method can also ensure minimal soil degradation.

Application of Conservation Soil Tillage (CST) ensure minimal 30% (up to 100%) soil surface covering by crop remains and they have a few basic functions: prevent soil erosion (by wind and water), preserve soil moisture, increase soil biogenicity and biodiversity, decrease soil temperature aberration, preserve or increase soil organic matter.

Key words: conservation agriculture, climate change adaptation, crop production

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