ECAF
European Conservation Agriculture Federation

Conservation Agriculture and the CAP 2020

Making Sustainable Agriculture Real

2011/2012

1. Introduction and justification

Europe is about to redefine its Common Agriculture Policy (CAP) for the near future. The question is whether this redefinition is more a fine-tuning of the existing CAP or whether thorough changes can be expected. Looking back to the last revision of CAP the most notable change is, undoubtedly, the concern about EU and global food security. The revival of the interest in agricultural production already became evident during the Health Check as a consequence of climbing commodity prices in 2007/08. It is therefore no surprise that "**rising concerns regarding both EU and global food security**" is the first topic to appear in the list of justifications for the need for a CAP reform. Other challenges mentioned in this list such as **sustainable management of natural resources**, **climate change and its mitigation**, **improvement of competitiveness** to withstand globalization and rising **price volatility,** etc. while not new are considered worthwhile enough to be maintained and reappraised.

Referring to the concepts of the ***EU 2020 Strategy***, the Commission wants CAP to contribute to the *Smart Growth* by increasing resource efficiency and improving competitiveness, to *Sustainable Growth* by maintaining the food, feed and renewable production base and to *Inclusive Growth* by unlocking economic potential in rural areas. In its communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, the European Commission defines 3 general objectives for the future CAP:

- Objective 1: Viable food production
- Objective 2: Sustainable management of natural resources and climate action
- Objective 3: Balanced territorial development

Figure 1 shows a detailed summary of the objectives of the EU Commission proposal for the new CAP 2020. Viable food production, in simple terms, means that EU farmers are given the means to produce the same or even more food at lower cost to meet the growing demand of food, feed, fibre and biofuels and competition from a globalized world market, while consumers can buy food at acceptable prices and quality. Sustainable management of natural resources and climate action means matching agricultural production with the simultaneous protection of soil, water, biodiversity, etc., and demands that agriculture contributes to the mitigation of greenhouse gases. Finally, balanced territorial development includes the maintenance of the diversity of production and that, despite severe natural constraints, especially in terms of soils and climate, agricultural activity is guaranteed which only seems viable through the adoption of low cost and probably extensive production systems.

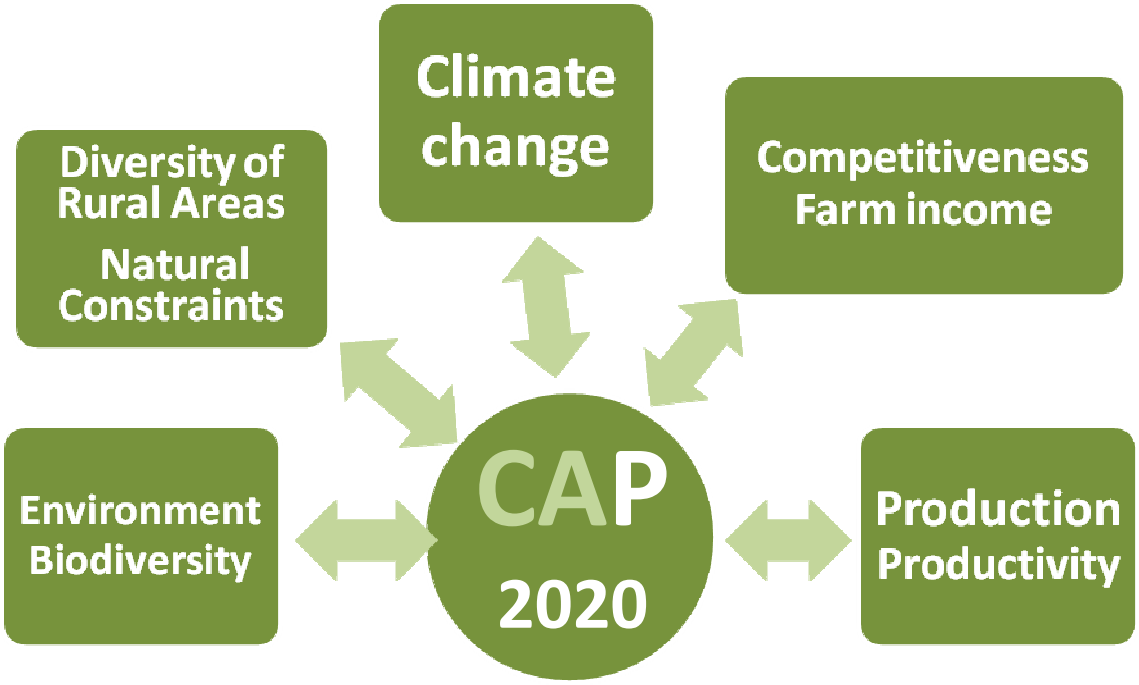

Figure 1: Main objectives to be met by the revision of the Common Agricultural Policy (CAP)

The ***Sustainable Crop Production Intensification*** approach proposed by the Plant Production and Protection Division (AGP) of the Food and Agriculture Organization of the United Nations focuses on the need to feed a growing population while coping with an increasingly degraded environment and uncertainties resulting from climate change. This concept provides "opportunities for optimizing crop production per unit area, taking into consideration the range of sustainability aspects including potential and/or real social, political, economic and environmental impacts". But what does this mean in practice and how can the proposed CAP 2020 objectives be made compatible?

At the moment, the EU Commission is about to adjust the direction of EU agriculture towards sustainability, in its holistic sense. In the prescient words of a farmer from Iowa (anon.) "Sustainability is a journey, not a destination". It also appears to be the search for the best compromise between the different dimensions of sustainability, which are economy, ecology and community (farmers and consumers). Today, in commercial farming there probably will be no single production system that can claim to be the "sustainable system". Obviously, the definition of the aforementioned best compromise depends on the priorities established. With regard to priorities defined in the revision of the CAP, what requirements should agricultural production systems meet to provide not only the optimal but the best solution?

In practical terms these requirements should be productive with regard to total production per unit land area. They are expected to be resource efficient, which means to produce more with less, primarily with regard to soil and water, but also other inputs such as fertilizers, plant protection products, energy and labour. The realisation of these two goals would not only contribute to competitiveness and economic sustainability but would also enhance environmental protection and biodiversity. Furthermore, sustainable production systems have

to reduce as much as possible off-site transport of soil and water and the nutrients and plant protection products contained in eroded sediments and surface runoff. Diversity and maintenance of agricultural activity in less favoured regions is only achievable if production systems are competitive in terms of cost.

A concurrent approach to realise all the objectives outlined in the Communication from the Commission "The CAP towards 2020" requires a production process which respects natural conditions and uses available knowledge and technology to optimise production, while enhancing and improving the environment and the production base for future generations. This is the true meaning of agricultural sustainability and ***Sustainable Crop Production Intensification*** and is reflected in the concept of Conservation Agriculture (CA). Figure 2 resumes the basic principles of this concept which are a) minimal soil disturbance, b) permanent soil cover and c) crop diversity in the form of well balanced and wide crop rotations.

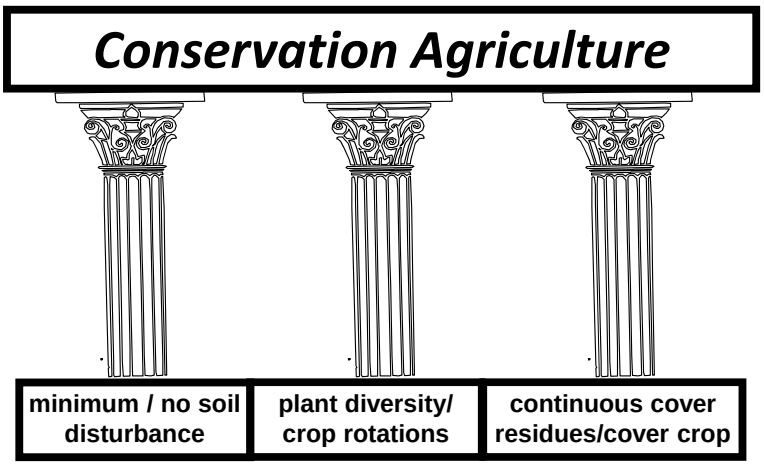

Figure 2: Principles of Conservation Agriculture (CA)

The adoption of these principles in locally adapted production systems for the growth of annual and perennial crops, pastures and forages, together with good quality seeds and optimally integrated nutrient, water and pest management, would realise the goals outlined in the revision of CAP by:

- providing similar or even higher yields through improvements in soil structure, organic matter and overall soil fertility;
- lowering production costs through reduced inputs of energy, labour and machinery in the short and long term, and fertilizers, water and pesticides in the medium and long term, thus raising related productivity and efficiency
- mitigating CO_2 emissions through reduced fuel consumption and sequestration of atmospheric carbon into soil organic matter, and reducing N_2O and NH_4 emissions through reduced use of mineral nitrogen and improved soil drainage;

- reducing runoff and erosion through better soil aggregate stability and improved water infiltration, and protective cover of the soil by crops and/or crop residues;
- diminishing off-site damage of infra-structures and pollution of water bodies through less runoff with a much reduced sediment load;
- maintaining in-field and off-site biodiversity through the absence of destructive soil disturbance, protective soil shelter and less off-site transport of contaminants;
- maintaining the diversity of rural landscape through enhanced crop and species diversity and cover crops;
- maintaining less favoured rural areas under production through adoption of economically and environmentally viable production methods.

The characteristics of locally adapted CA production systems together with the rational and responsible use of external inputs will optimize crop yields, farm income, competitiveness and (bio)diversity, and minimize any negative ecological impacts associated with intensive farming. The use of herbicides to facilitate weed control and soil cover management is an option to reduce production costs and to avoid the aforementioned negative effects associated with soil tillage, including the stimulation of further weed emergence and spread. There is no evidence of an increase in the use of herbicides under CA systems when compared to conventional tillage farming. Instead, there is a shift in application timing and towards the use of contact herbicides. The latter are less persistent in the environment than the more frequently used residual herbicides in conventional farming. In countries such as Canada (Blackshaw and Harker, 2010) and Australia (Crabtree, 2010), which have agroecological conditions similar to Europe, herbicide use per tonne of output is lower in CA systems with integrated weed management than in conventional tillage farming.

When CA systems are adopted over large areas, it is possible to harness much needed environmental services such as clean water, erosion control, carbon sequestration, reduced GHG emissions, reduced risks of floods and drought, biodiversity protection, etc. that have heretofore not been fully possible with conventional intensive tillage-based agricultural land uses in Europe (Kassam, 2010). Thus, CA principles and systems would provide a solid bridge between the two Pillars of CAP and make cross-compliance environmentally and financially meaningful on an EU-wide basis. Adoption of CA will also provide a foundation for developing environmental service schemes such as carbon sequestration and trading, clean water provision, soil erosion control, and biodiversity enhancement etc. in which incentives and payments can be linked to specific production systems and services. Such schemes exist elsewhere such as in Canada where a cap and trade scheme, started in 2007, enables regulated industries to purchase carbon offsets from agriculture sector based on a CA(no-till) production protocol adopted by farmers.

Today CA is practiced on some 124Mha around the world (www.fao.org/ag/ca)across all continents and in all agroecologies, with some 50% of the area located in the developing world. The spread of CA has been increasing at annual rate of 7 Mha during the past decade. This widespread adoption of CA is direct proof of its viability and sustainability, especially in

some South American countries where there is no subsidy support for primary producers, and where CA is used on more than 60% of the arable land. In addition, the fact that CA is successfully applied under very different climate conditions strongly indicates that there is great potential for the adoption of CA principles on a Europe-wide basis. Since its foundation in 1999 the European Conservation Agriculture Federation (ECAF) has lobbied for the widespread adoption of CA in its 15 member countries. Its main objective is to integrate CA as the basic principle in mainstream agriculture in Europe including EU member states. At the same time, other tillage-based production systems such as horticulture, organic farming, agroforestry, irrigated flooded rice, would equally benefit from adopting these principles. In some EU countries, notably Spain, Finland, and France, moderate success has been achieved other member states lag far behind in terms of CA adoption. The reasons are manifold and range from the cultural entrenchment of soil tillage over the wrongly perceived need for increased herbicide inputs to the missing recognition of CA as an overall framework for sustainable production systems and for sustainable production intensification.

ECAF actively participated in the discussion and development of the Soil Thematic Strategy. The implementation of the Soil Framework Directive was supposed to promote the adoption of CA throughout Europe. Unfortunately, it was blocked by a few member states. Now, ECAF will attempt to inform stakeholders during the revision process of the CAP, in order to obtain recognition and administrative and political support for the concept of Conservation Agriculture as a sustainable crop production system capable meeting the wide ranging objectives of CAP 2020.

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Further reading (attached):

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