Theme 6
Social, economic and policy issues – increasing adoption and impacts assessment

PP157: Food legume value-chain study in Morocco: Supply analyses
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This study is part of IMFLI program conducted by INRA and ICARDA in five selected sites or platforms. It will contribute to set a basic situation of the cropping system and the main environment, social and economic benefits that can be used in assessing the impact of the selected technological alternatives. The study was conducted in IMFLI selected platforms used by the biophysics team. The objectives of the activity are; (i) Analyze food legume monograph by region in order to estimate growth rates of production area and grain yield, (ii) describe production system and the importance of food legumes at the farm level, (iii) Establish food legume enterprise budgets in order to estimate production cost and income, and (iv) identify farmers’ perceptions of the main constraints for the development/rehabilitation of food legumes. According to the survey, food legumes play an important role in the areas of Zemmour-Zaier, Meknes-Taounate, Chaouia, Abda-Hmar and Tadla-Azilal with respective proportions of 31, 30 and 25, 20 and 13% of cropped land. This proportion is far from the reasonable rotation that was used by farmers. Lentil occupies 46% of total food legume area in Zemmour-Zaier region. In Meknes-Taounate region faba bean is the most grown crop and occupy 58% of total food legume area. Chickpea is occupying 56% of total food legume area in Chaouia and Abda. In Tadla we found that lentil and pea are grown over 37 and 34% of total food legume area, respectively. Production technologies have not changed significantly in Abda-Hmar and Tadla-Azilal according to what was practiced by farmers since 80’s. The most applied crop rotation is wheat after food legume and it’s used, in average (all regions) by nearly 45% of farmers. Other rotations are used such as cereals/fallow (20% of farmers) and continuous cereals particularly by small farmers in Chaouia and Meknes. For all crops planting and harvesting operations are representing over 60% of total costs. Exceptionally for Zemmour-Zaier region crop maintenance cost is high because farmers are using chemical control of weeds and insects. In general the use of inputs is very limited in all regions. The use of fertilizers is very limited. However it is important to notice that food legumes are labor intensive, especially for lentil and chickpea. Finally, we notice that cultural practices applied are traditional. This can be considered as a constraint to the improvement or rehabilitation of food legumes in Morocco. Food legumes were considered as share cropped crops and socially contribute to the involvement of landless households who were considered as experts.

PP158: Distribution and importance of chickpea fusarium wilt disease (Fusarium oxysporum f sp ciceris) in the Sudan
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A survey for Chickpea Fusarium wilt disease was conducted in 2011-2012 cropping season in four States in northern and central Sudan in respect to variety, soil type, sowing date, seeding rate, preceding crops, watering intervals, growth stage and fertilizers application. The small Kabuli Baladi variety predominated in more than 70% of the surveyed locations and it is the most susceptible variety to the disease with Shendi (ILC 1335) and Jebel Marra (ILC 915) varieties compared with the other improved
varieties. The heavy clay soils of Gezira State supported the highest disease percentage whereas the light clay and sandy clay soils of Gezira north and River Nile States supported the lowest average percentage. Mid November sowing predominated between farmers and about 60% of them grow their crops between the first and mid of November but the early sowings during this period were highly subjected to wilting incidence. The late sowings of the crop on early and late December although they escape the high temperatures of early winter and hence the disease, they affect the crop yield potentials. The seeding rate varied from farmer to farmer in a range of 15-125 kg seeds/ha and the disease is more severe in the higher population densities of the crop. Cereals predominated other preceding crops to chickpea in the rotation and more than 40% disease incidence was recorded in monocropping system. For watering intervals 45% of the farmers irrigated their crops in two weeks interval while the others irrigated in 2 to 3 weeks interval. The longer intervals subjected the crop to higher disease incidence than shorter intervals. Around 54% of the farmers did not apply any kind of fertilizers to chickpea and 45% apply starter dose of Urea and foliar fertilizers. Adding fertilizers to chickpea was not significant in reducing disease incidence. The correlations between these cultural practices and wilt per cent, indicated that only the preceding crop and sowing date significantly affected the disease incidence.

PP159: Economic impact of broomrape (Orobanche crenata) on pulse crop production in northeastern Ethiopia
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Broomrape (Orobanche crenata) is a parasitic weed that has become a nuisance to pulse crop production in many parts of Ethiopia. Despite the challenges posed by the weed, there has not been any study on its economic impact at farm household level in Ethiopia. With the aim of filling this gap, this study reports the impact of broomrape on farm level productivity and farm income based on 540 randomly selected households in northeastern Ethiopia. We have employed nearest-neighbor matching and propensity score matching methods to estimate the impact of broomrape infestation and dose-response function to assess the impact of degree of infestation. The results show that farm households are being affected significantly by broomrape. We have suggested research and development interventions that might help in abating the economic losses farmers incur due to this parasitic weed at least in northeastern Ethiopia.

PP160: Evaluation of productivity, profitability and farmer’s adoption potential of direct seeding of lentils in Zaer region (Morocco)
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Morocco is increasingly confronted with drought effects on crop production as 93% of the country comes under semi-arid climate zone. To mitigate the effects of drought on agricultural production, farmers should combine all available production technologies and practices to produce more food per cubic meter of water. Direct seeding or no till is one of those practices to mitigate impact of drought. Crop yield potential with direct seeding in rainfed systems is often greater than with conventional tillage systems, particularly where sub-optimal rainfall limits yield. No-till lentil holds promise for minimizing soil and crop residue disturbance, controlling soil evaporation, minimizing erosion losses, sequestering carbon and reducing energy needs. These effects reduce overall cost of production while improving yields and returns. The potential of direct seeding technology of grain legumes for small farmers is important. The objectives of this study were to (1) evaluate direct seeding technology on lentil productivity and