

Interactive comment on “Mathematical model to select the optimal alternative for an integral plan to desertification and erosion control for the Chaco Area in Salta Province (Argentina)” by J. B. Grau et al.

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The authors needed time to contact and propose a new redaction for “3.3 Alternatives” (p. 2607, line 21). The proposed redaction is (page 2607 line 24) as follows.

“Some authors are experts in the region, and the whole of them has visited exploitations, research centers in Salta, and some centers related to them in Spain. It results that in a portion of land, actions can be clearly effectuated in some precise general ways that are incompatible and very real. They propose them as alternatives to be

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taken as a necessary durable real election. Each one will need a further election of species depending on the sub zone, markets, and human conditions. The first election of alternative is a decision problem for which specific decision theories are proposed in this paper. These alternatives, general and incompatible, are: A. Autochthonous forest: mainly of hardwood trees like “Quebracho Blanco” and “Quebracho Colorado”, that are species autochthonous from Chaco Salteño, getting an environmental alternative. B. High value forest: mainly teak, ebony, walnut tree, cherry tree, *lignum vitae*, eucalyptus, etc. . . . The autochthonous forest that is often degraded can be replaced by them to get higher profits, easier as they grow in shorter delays, all that being acceptable from an environmental point of view.

C. Traditional farms with extensive agriculture and livestock mixed with parts with autochthonous forest modified and several foraging plants, and parts with soy alternated with “cartamo”. With irrigation North of Las Lajitas, in “La Moraleja” exploitation diverse products are grown including melons, lemons, vegetables, diverse trees, etc. . . .

D. Erosion control crop with agriculture use; with or without irrigation that is preferable. The species are main crops such as corn, (winter wheat produces less and it needs rain in the dry monsoon season), “cartamo”, “esparceta”, alfalfa, halitux, “cardo” (thistle). Soy, genetically modified, without tillage, is productive for markets actually and may degrade soil at long term.

E. Erosion control crop with industrial use, (biomass, bio-ethanol, bio-diesel). There are many possibilities but the products are not the most used now. Products like “cartamo”, colza, “mani” (peanut), soy for bio-diesel; sugar cane, potato, corn for bio-ethanol; sub-products for biomass. “

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