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About some aspects of weather related risks in Spanish Agriculture

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Spain is varied in orography and in climate, and contains different agricultural and forestry systems, in general not rich due mainly to mountains or to aridity, but effective for food products and for a moderate amount of exportations in spite of much uncertain weather, that presents a middle level of possible aggressive effects. The NW or NNW is humid and Atlantic but mountainous, a plateau covers half the surface of the Iberian peninsula, being arid but close to more humid mountains affording the disposal of hydraulic systems including irrigated areas. The levels of rain change much from year to year, and hence agribusinesses have uncertain productions. They are now in an European Agricultural Policy that concerns markets, subventions, and limitations that are lower in 2008 because of low levels of alimentary reserves. Prices compensate sometimes lower production in cases, but are irregular in others such as for potatoes, and in Spain farmers are in general not especially happy with the commerce business that buys products. Meteorological data exist for single regions since about 1855, with dense observatories established after 1947 and with reliable hydraulic data in rivers since 1912. They have put in evidence cycles of 11 years, all quite different. Floods may be aggressive, and for return periods of no more than 100 years simplified methods use rain maps made from data using extreme values law type I schemas where the level of dispersion depends much on region. Special phenomena of “gota fria” or “cold drop” more localized and with much higher dispersion may cause in regions at East rare daily rains of more than 400mm in reduced areas. Some big floods with great return periods of are considered by law catastrophic, meaning that state agencies pay some damages and not insurers, lowering excessive risks for them that otherwise could only be balanced by higher primes and reinsurances. Climate evolved historically, being noticeably colder and with more aggressive floods in 1500-1800 era, and actual added trends of “climate change” are towards higher temperatures, less water and higher perturbations. These long term risks are rather poorly predictable and will be handled mostly by improvements in agriculture and also by social and economic adaptations, but at shorter delays and specific areas active policies are possible and exist. An agribusiness can set his production plans lowering his global risk. Sometimes it might use prudently some financial instruments, such as “orange juice futures”. When using decision making models, some utility functions may consider that severe losses have higher effects than good profits, letting ranges for business margins for insurers to be limited by concurrence at correct levels. Correct availability of credits is necessary for bad periods, and also state policies for rare bad situations, concerning agribusiness survival and also alimentary safety. Insurance products are effective aids for a growing variety of well definite natural risks, such as in cases of hailstorm, that have probabilities of occurrence measurable from previous events data, and a variety of adequate professional models are continuously made for them. Related to Universidad Politecnica de Madrid the CEIGRAM institute has started recently and is involved in agricultural insurance, being connected with insurers through ENESA and AGROMUTUA. That world is active, important, evolving, and is regulated by diverse laws.