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► To cite this version:

Eliel González García, Laurence Lamothe, Magali Jouven, Davi Savietto, Marielle Thomas, et al.. Livestock and Agroecology: redesigning animal production systems in the 21st century. Regional Symposium on Agroecology for Sustainable Agriculture and Food Systems in Europe and Central Asia, Nov 2016, Budapest, Hungary. 2 p. hal-01608445

HAL Id: hal-01608445

<https://hal.science/hal-01608445>

Submitted on 5 Jun 2020

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SHORT SUMMARY

FAO REGIONAL MEETING EUROPE AND CENTRAL ASIA

“AGROECOLOGY FOR SUSTAINABLE AGRICULTURE AND FOOD SYSTEMS IN EUROPE AND CENTRAL ASIA”

BUDAPEST -- NOVEMBER 23-25TH, 2016

Intervention: Eliel González-García (INRA, France)

Livestock and Agroecology: redesigning animal production systems in the 21st century

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In the current complex globalized world, marked by deep economic and financial crises, civil conflicts, massive human movements, negative and unpredicted effects of climate change, extinction of natural species, loss of biodiversity, ecosystems and agricultural lands, and the decline of the “fossil energy era”, the human being assist to challenges as never before. In a finite planet, at the same time that we assist to exceptional technological progresses, the polarization of richness and poverty paradoxically continues to rise and the increase of global population is followed by an exponential increase in food demands. The world is more hunger than ever and the planet already said *basta* due to its evident limits in the natural resource base. In this context, we must take party when deciding our best options for the future and, for the agricultural sector development (highly concerned with the global food security goals) there is a large consensus that future trends must seriously consider current worries issues in terms of economic pertinence, environment conservation and societal exigencies. The agroecology provides a pertinent framework for fulfilling those objectives. By taking into account viewpoints coming from the large range of stakeholders implied in the food chain the agroecological thinking consider the human being in the centre of the system and put forward knowledge, traditions and iterative, dynamics feedbacks, rather than relying on dependencies from technological packages and external inputs like in the green revolution era. However, whereas is strongly judged and criticized, the animal sector has been largely ignored in the agroecological debate, despite its strong presence and role in the rural landscapes,. The emphasis has been done in the agricultural sector. Therefore, trying to contribute to fill this gap, a multidisciplinary team at INRA (France) carried out a deep and conscientious work looking for *i*) defining and establishing the main principles on which animal production systems (APS) would have to focus for achieving the required agroecological transition (Dumont *et al.*, 2013) and *ii*) proposing priority research issues deserving further attention by the animal science community (Dumont *et al.*, 2014). That work was based on a) sounds literature reviews for updating the current state of the art and b) fruitful outputs coming from several brainstorming and feedbacks sessions in interaction with the scientific community. Thus, five principles were proposed based on keywords like connecting and integrate, recycle, be autonomous, be clean and protect and defend natural and cultural richness. The 5 principles calls for **1)** adopting an integrated management of animal health; **2)** decreasing external inputs by relying on a better understanding and valuing of natural processes; **3)** decreasing negative environmental impacts and pollution due to APS activities by optimizing metabolic functioning of farming systems; **4)** enhancing the APS diversity for increasing system resilience; and **5)** preserving biodiversity by adapting adequate farm management practices. Those principles are not restrictive and may be combined in a range of APS situations and species (from monogastrics to ruminants and fish). Furthermore our position is that agroecological approaches must not be divorced from valuing technological advances. Biotechnology and techniques developed with the livestock precision

farming approach may and should be considered for increasing efficiency in the processes, for example. For that, in a second step, a research agenda was proposed considering system components (animals, herds, feed resources and housing...). A revisited way for designing future APS using agroecological principles and bases is discussed. Systems must be evaluated in a different way and should imperatively consider the economic, environmental and social issues. Finally, the scaling up of successful farm practices and APS must take into account modern rules and methods, social and ethical issues as well as a more active implication of public actions and decision makings. Among the research issues an emphasis is made in animal adaptation and farming system design research questions. The requirement for another kind of interpretation of the factors affecting and determining a sustainable and productive functioning of APS is largely discussed with the important role of an interdisciplinary research perspective.

References:

(For a better comprehension and further details, the reader are advised to check the following scientific publications)

- Dumont, B., Fortun-Lamothe, L., Jouven, M., Thomas, M. and Tichit, M. 2013. Prospects from agroecology and industrial ecology for animal production in the 21st century. *Animal* 7:6, 1028–1043.
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