

AGROECOLOGY - SALUTOGENESIS IN AGRICULTURE

MULTICRITERIA INDICATORS AND QUALITATIVE METHODS TO EVALUATE CROP HEALTH PROMOTING FACTORS: THE CASE OF AN AGROECOLOGICAL FARMER IN THE SOUTHERN PAMPA (ARGENTINA)

INTRODUCTION

Agroecology is a science, a practice and a movement that intends to change the whole agricultural model taking care of the environment and people by promoting a democratization of the food system. As a science it can be understood as a trans-discipline with a holistic and systemic approach that integrates scientific with local knowledge and is socially and politically engaged.

When the **concept of health** is applied to crops it is usually restricted to the “absence of disease”. Here we understand health as a condition and also as a process that involves social and ecological dimensions. The condition can be evaluated by considering the adversities, the utility, autonomy and safety of the cropping system. For analyzing how health is promoted, the model of **salutogenesis** developed by Aaron Antonovsky for human medicine has been adapted and applied.

Objective: In this poster we introduce the work in progress of a project that intends to study **how agroecological farmers promote crop health** without the use of pesticides. We illustrate this by presenting here a study case in Argentina with wheat as the model crop.



Fig. 2: Wheat cropping system in the field “Monte callado” with spontaneous vegetation and seeded with red clover as polyculture that after the harvest is used as forrage for animal production.

METHODS

Regional context: The Southern Pampa, the main wheat production region of Argentina, experienced in the last decades important transformations due to the expansion of the industrial agriculture model, resulting in lower crop richness, landscape homogenization and land concentration.

Case: The farm “Monte callado” is managed by a family farmer with 20 years of experience in agroecology. He follows the ideas of Masanobu Fukuoka of “natural agriculture”, has 100 ha. of a diversified agriculture integrated with animal production and uses no pesticides.

Data collection and analysis: Multicriteria (quantitative and qualitative) indicators for crop health condition and salutogenetic factors were developed and relativized to a scale from 0 to 3. Dialogic interviews were conducted to collect data of farmer’s motivations and local knowledge.

CONCLUSIONS

The motivation for taking care of nature and producing healthy food and local knowledge construction of the farmer were important crop health promoting factors. This is related with the high border diversity and soil health promoted by rotation with animal production, polycultures and cover crops. This increases the manageability and results in an increased autonomy and the safety of the system.

References

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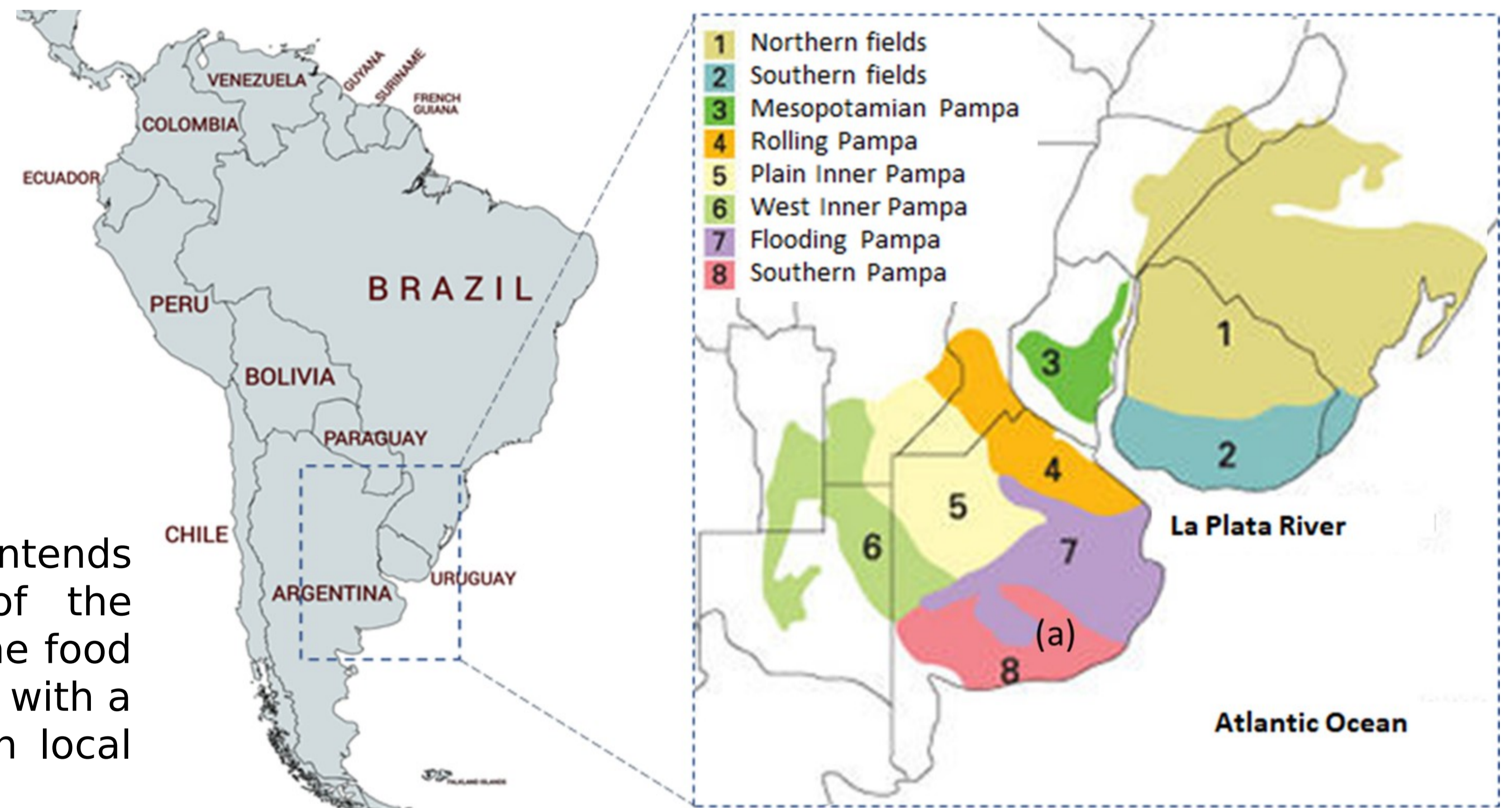


Fig. 1: The Pampa Region in Southamerica (left) and its subregions (right). The farm of this study case is located in the Southern Pampa, indicated with an (a).

RESULTS

Health condition: The utility was medium (1,7) because yields were below the average of the region but compensated by the good quality and that the farmer is very satisfied with the results. The system had low adversity problems (2,5), high autonomy (2,7) and high safety (2,5), mainly due to the avoidance of use of pesticides or fertilizers and the self-production of seeds.

Salutogenesis: The motivational component was very high (3.0). The aim of the farmer is “to do things right”, to work “honestly” and he considers that industrial agriculture does not. Nature care and to have a healthy environment and good quality food for his family are the main motivations. In his words:

“You can’t measure this in terms of profit, the richest person in Tandil [the town nearby] can not buy the food of the quality that we have here”.

Comprehensibility was good (2.0) thanks to the construction of local knowledge but limited by low interaction with support local actors. He stressed the importance of landscape and nutrition strategy for crop health:

“A few decades ago, varieties were not used associated but it was not necessary because the fields were very small, the crops had healthy surroundings”.

“Nowadays agriculture generates problems and promotes diseases due to fertilization; the same happens to animals, if you give them too much food, disease problems arise”.

Manageability (1.9) was limited by the intermediate response capacity to problems and the use of few varieties, but was compensated with the high border diversity and soil health that was promoted by the integration with animal production, polycultures, cover crops and an heterogeneous landscape.

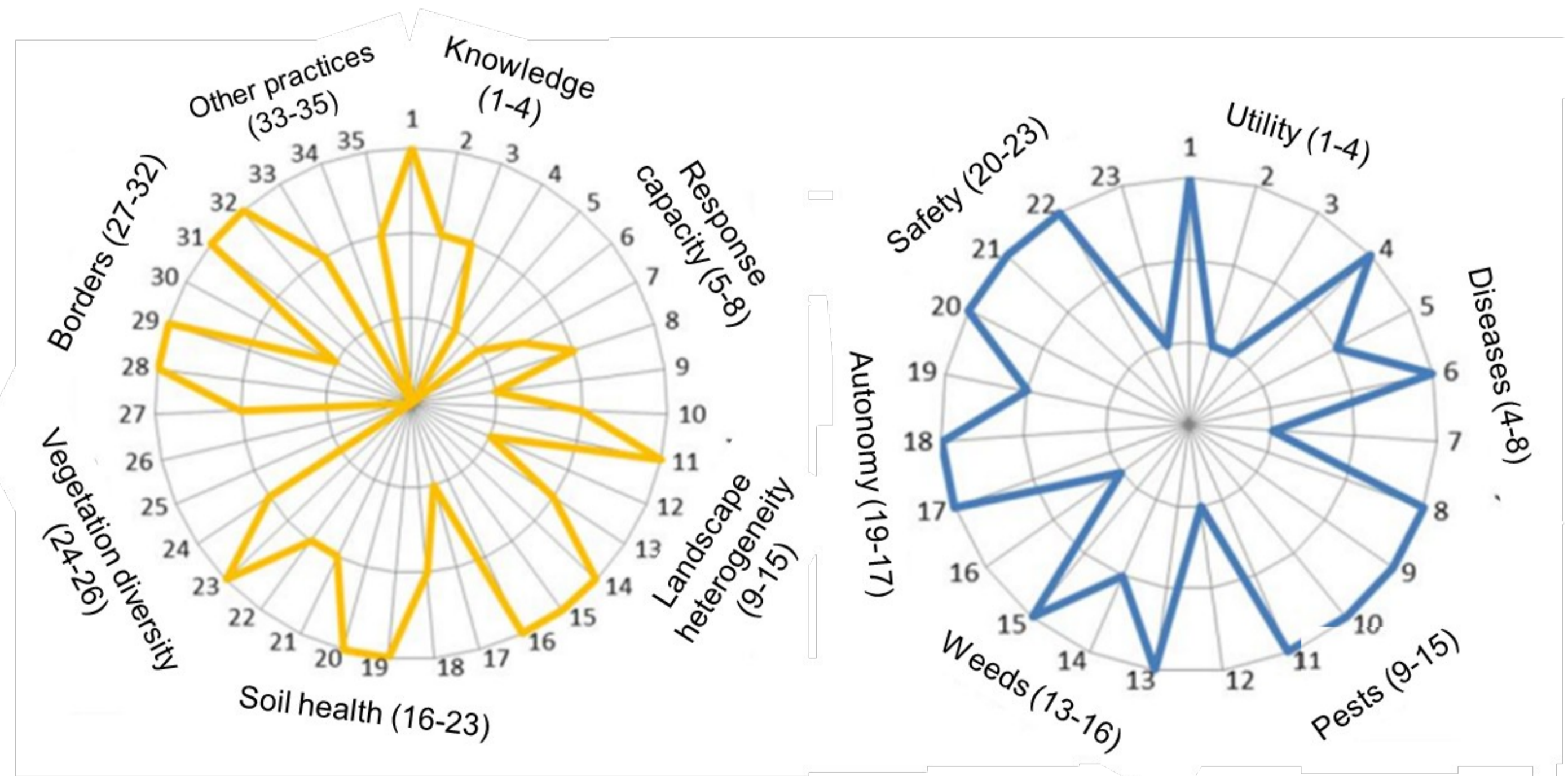



Fig. 3: Indicators of crop health condition (left) and of salutogenesis (right).

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