

for problem-solving in the field of nutrition

Hoffmann I, Schneider K

Institute of Nutritional Sciences, Justus-Liebig-University Giessen, Wilhelmstr. 20, D-35392 Giessen, Germany
Mail: Ingrid.Hoffmann@ernaehrung.uni-giessen.de, Homepage: <http://www.uni-giessen.de/fbr09/nutr-ecol/>

Many nutrition-related problems are complex and multidimensional with underlying interlinked cause-effect relations. An example for such a complex problem is the increasing prevalence of obesity/overweight. An approach for integrative and sustainable problem-solving in the field of nutrition is Nutrition Ecology.

The term Nutrition Ecology is used in the sense of complex interactions between components or aspects in the field of nutrition. Nutrition Ecology is not limited to environmental impacts (econutrition). Instead it encompasses the dimensions health, environment, society and economy. These dimensions of nutrition are considered simultaneously and coequally, each encompassing a large number of aspects which are interlinked both within and across the dimensions. Fig. 1 shows examples for the variety of aspects of the four dimensions.

Because of the interrelatedness of the aspects each modification of an aspect may cause side effects (in addition to the intended effect) and result in feed-back loops. In consequence, effects may be induced in many other aspects and this in all dimensions as well as along the food supply chain from agricultural production, via food-processing and trade to consumption and waste disposal.

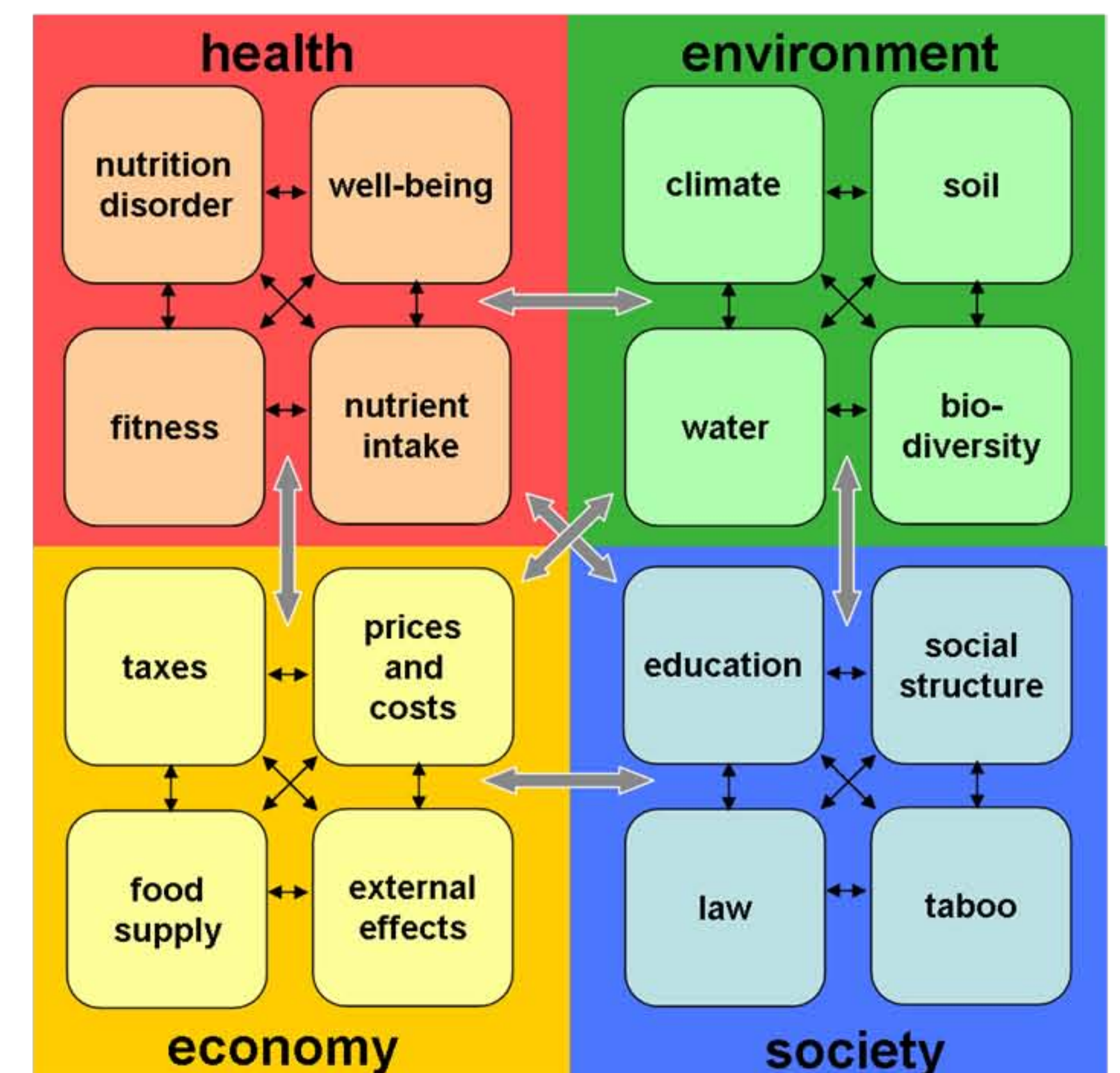


Fig. 1: Dimensions of Nutrition Ecology and examples of aspects and their interlinkages

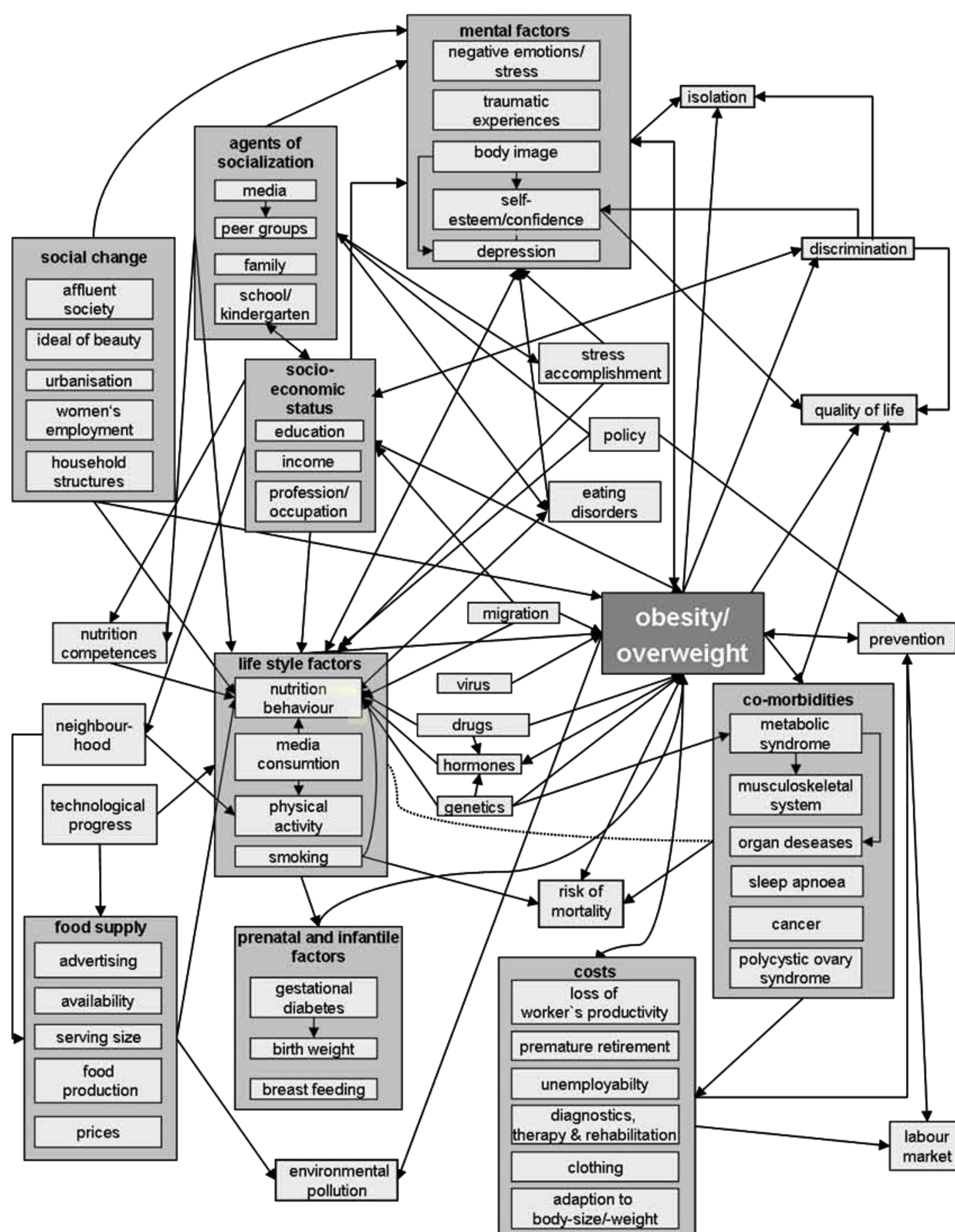


Fig. 2: Example for a qualitative model: interrelated influencing and effecting aspects of obesity/overweight

Nutrition Ecology provides a platform for discipline-transcending problem-solving processes. Each problem requires its own inter- or transdisciplinary cooperations. Fig. 3 exemplifies such a platform for the problem of obesity/overweight.

In summary, Nutrition Ecology offers a systemic concept for solving nutrition-related problems by consideration of multidimensionality, interrelatedness and dynamics in the field of nutrition by applying methods of complexity research and of knowledge integration.

To process a complex problem in the sense of Nutrition Ecology scientific disciplines as well as practice actors affected by the problem need to be involved. This is according to the concept of inter- or transdisciplinarity.

Furthermore, the components of the problem need to be captured in their complex cause-effect-relationships. This may be accomplished by a qualitative or quantitative model. The qualitative model on obesity/overweight (fig. 2) exemplifies that in addition to physiological aspects a multitude of aspects like socio-economical, psychological, life-style or institutional aspects with their interactions need to be included.

Such a model helps to identify the problem-relevant influencing and effecting aspects of all dimensions with their direct and indirect interlinkages. This allows insights into and estimation about potential (side) effects of interventions. The model also serves as the basis for the decision which disciplines and practice actors should be included in the problem-solving process.

The synthesis of different disciplinary perspectives and of knowledge from science and practice may be reached, amongst others, by a recurrent integration of partial results and a consensus on applied methods and theories.



Fig. 3: Nutrition Ecology offers a platform for discipline-transcending problem-solving processes, exemplified for obesity/overweight as a complex problem