



Project Update

Projekttitle (Akro- nym):	NutriAIDE – Building smart food environments for improved nu- trition
Country/region/city	Indien / Hyderabad
Call title	No. 11/19/32 “Food environments for improved nutrition”
Cooperation partners	Augsburg University, Chair for Urban Climate Resilience German Institute of Human Nutrition Potsdam-Rehbruecke Wuppertal Institute for Climate, Environment, Energy gGmbH ICMR-National Institute of Nutrition, India Calvry Wellness Solutions Ltd
Project duration	1 July 2021 – 28 Febraury 2025
Budget	1.393.708,81 EUR

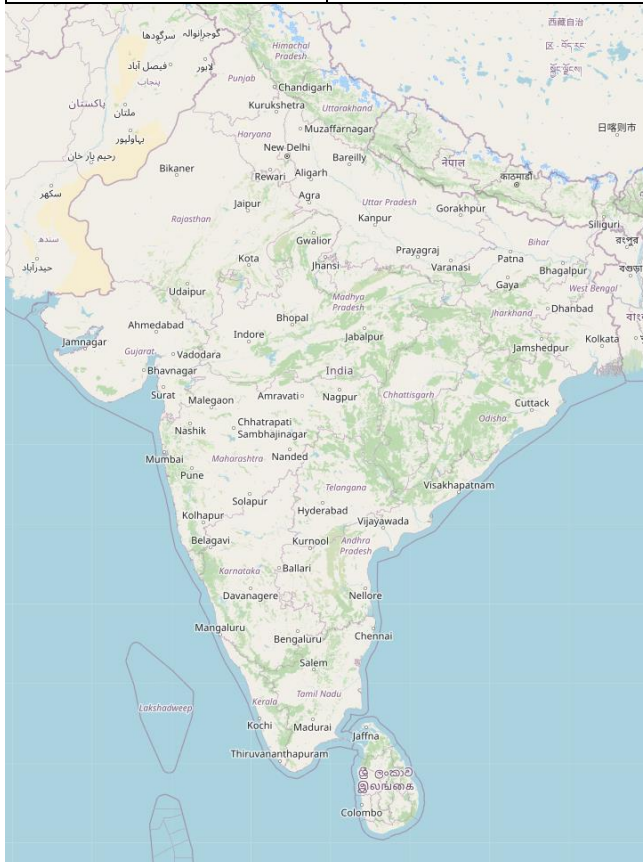


Figure 1: India (OpenStreetMap)



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Project goals:

India is currently facing rising health and economic costs of malnutrition, which is accompanied with undernutrition coupled with growing rates of overweight and obesity (WHO 2017). Malnutrition is the result of the country's globalized food system. In this project, we follow Hawkes et al. (2015) and take food environments as a starting point for transforming India's food system. Food environments encompass the socio-spatial contexts in which consumers interact with the food system (HLPE 2017). They are key "interfaces" between the overarching food system on the one hand and individual food habits on the other (Herforth & Ahmed 2015).

The goal of this project is to conduct a real-world experiment. In a first step, we investigate the different food practices of the Indian middle class. This will be accompanied by research on decision-making processes as well as health, socio-economic and ecological consequences. In a second step, after combining results from nutritional sciences (ICMR-National Institute of Nutrition, India), geography (Augsburg University), neuro-psychology (German Institute of Human Nutrition Potsdam-Rehbruecke) and sustainability science (Wuppertal Institute for Climate, Environment, Energy gGmbH), we develop an application software (app) called NutriAIDE in cooperation with the private software developer Calvry Wellness Solutions Ltd. and distribute it to a test group of persons. With the help of the app, users can question their eating habits and learn healthier and more ecologically sustainable ways of eating. Finally, we test whether the app was able to reduce the consumption of processed foods and fast food and to increase the demand for unprocessed, more ecologically sustainable products and a diversified diet among the participants of the test group. The results of the intervention are quantified by comparing the behavior of the test population with that of a similarly structured comparison group.

The experiment with its interdisciplinary detailed investigations and the intervention (distribution of the app to test persons) will be conducted in Hyderabad. An additional experiment (including survey and intervention) will be conducted online to compare the locally generated results in an all-India context.

Initial results:

In the first year of the project, the formative study in the metropolis of Hyderabad (in the state of Telangana) was completed. These studies served to prepare the main investigations and the intervention, but at the same time already delivered initial results. The qualitative in-depth interviews with middle-class consumers in Hyderabad showed that urban food environments and food-related decision-making in India are dependent on a number of cultural factors that differ from European contexts.

As could be seen from the statements of the interview partners, the respective household constellation of the interviewees plays a special role in this context. Individual food practices are strongly influenced by how many generations live together in a household. In India, large families are the rule rather than the exception, although there are now also single or couple households. The beliefs that precede the actions are strongly influenced by these different constellations. The dietary practices of female subjects in particular are strongly dependent on their role in the family (single, wife, mother, mother-in-law, etc.). In this context, it is interesting that the food practices of female respondents change over the different phases of life (e.g. childhood, sin-



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gle life during studies, marriage, birth of the first child, job-related move, etc.), in some cases seriously. It can be assumed that the food habits of female respondents change more over time than those of male respondents in relation to their role within the household.

It also became clear that urban food environments in Hyderabad and other major Indian cities are currently undergoing dynamic change. This change is due to the fact that young adults in particular are increasingly using delivery service providers for their food supply. This applies to both unprocessed food and ready-prepared meals. This phenomenon was triggered by the rapid digitalization of India and the emergence of a "modern" digital lifestyle among the younger generations. Other societal events have accelerated these processes, such as the demonetization of the most common banknotes (500- and 1,000-rupee bills), which has made cashless payments possible even at small street vendors, primarily using smartphones. Second, according to interviewees, the past Covid-19 pandemic has increased the trend of using (online) delivery service providers. The increasing demand for delivered convenience food is also accompanied by an increased demand for meat dishes (primarily poultry).

As a consequence, a range of different food environments can be observed in Indian metropolises today, which underlie and are simultaneously reproduced by food practices. This situation can be observed particularly well in the extended families that are more common in India. Thus, interviewees report a generational rift that pervades their families. While the younger generation likes to use (online) delivery service providers (e.g. Swiggy or Zomato), the older generation tends to prefer home-cooked meals. As a result, many households have both types of food in parallel. The traditional home-cooked meals are supplemented by delivered meals in order to meet all the demands of the household members. In some cases, this also means that families that traditionally ate a vegetarian or vegan diet now order additional meat dishes for the younger generation.

It was also shown that the ecological footprint of certain diets has hardly been considered so far. Rather, the consumption of food and dishes from (online) delivery service providers is accompanied by aspirations of a "modern" lifestyle. Similarly, little attention is paid to critical reflections on socio-economic implications of food supply. Since the early 2000s, international supermarket chains and fast-food restaurants have been reshaping the Indian food market. These players, new to India, not only offer highly processed foods, but also change customers' perceptions of freshness and food quality. Small local grocers, who often offer the fresher, higher quality, and more sustainable food, are gradually being displaced by the large supermarket chains (Ray 2020). A market consolidation can already be observed, so that individual suppliers have an ever greater market power. This trend was rarely seen as problematic by the respondents – despite the fact that this criticism has been publicized for a few years by some newly organic stores (Erler et al. 2022).

In sum, India's urban food environments are extremely dynamic. This dynamic is primarily fed by the transformation of urban food markets by supermarkets and (online) delivery service providers, which is accompanied by a growing demand for convenience products and increasing meat consumption. As a consequence, female consumers in particular are currently confronted with fluid and sometimes contradictory demands and value systems that need to be differentiated and weighed against each other.



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Summary and Policy Advice:

As the project shows, there is a range of different food environments in Indian metropolitan areas today that underlie and are simultaneously reproduced by food practices. Any form of formative policy must take this range into account, without which India's cultural diversity cannot be accommodated. With regard to the overarching goal of combating malnutrition, it can already be confirmed at the current stage of the project that special attention must be paid to the role of women, because they come under additional psychological and social pressure due to the dynamically changing urban food environments on the one hand and traditional role perceptions within households on the other.



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Online Delivery Services for Food



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Digitalized Urban Food Environments





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Selected Interview Situation (Hindu Household)



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Selected Interview Situation (Muslim Household)



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