



## PROCESSING

**Innovative approaches to process local food in Sub-Saharan Africa and Southeast Asia, which contribute to improved nutrition, as well as qualitative and quantitative reduction of losses**

### Akronym: IFNext

<b>Country</b>	Cambodia, Thailand, Germany
<b>Funding Agency</b>	Bundesministerium für Ernährung und Landwirtschaft – BMEL
<b>Project executing Agency</b>	Bundesanstalt für Landwirtschaft und Ernährung – BLE
<b>Project Budget</b>	640.498,10 €
<b>Project Duration</b>	Three years
<b>Key Words</b>	Entomophagy, novel and traditional foodstuffs, mothers and children, nutrition, sustainable farming, edible insects
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<p><b>Short Description</b></p>	<p>Thailand and Cambodia are both affected by malnutrition of children and mothers, be it by the sheer amount of persons suffering from it (Thailand), be it by the high percentage of the general population (Cambodia). While consuming insects (entomophagy) has a long tradition in these countries and is relatively widespread, this tradition involves gathering from the wild and subsequent preparation and consumption of the fresh or frozen insects. On one hand, if food insects, because of their nutritional benefits, are to play a major role in providing food for mankind, farming rather than collecting from the wild will be necessary. These techniques, already practiced in some parts of Thailand and Cambodia, have the potential to be used as mini-livestock by families, as many insect species may be raised sustainably on agricultural side streams with less ecological impact as more typical livestock. On the other hand, rearing insects is prone to create surpluses in insect production, making preservation techniques necessary to ensure food safety by extending shelf life. These novel products may be produced for the family or sold at local markets creating an extra income.</p> <p>IFNext attends these needs. The overall goal is to produce insects sustainably for the own consumption resp. to generate products that can be sold on the market and that actually meet the expectations of farmers and consumers alike.</p> <p>For that, starter kits for insects (sometimes including building adaptations) will be developed and distributed to the participating 40 Southeast Asian families. Regarding insect species, the consortium agreed on one species which will be reared by all, i.e. Mediterranean field cricket (<i>Gryllus bimaculatus</i>) to compare results. Besides, each consortium member will also attend another species of national interest: Thailand will work with the silkworm (<i>Bombyx mori</i>), Cambodia with the Cambodian field cricket (<i>Teleogryllus mitratus</i>, formerly known as “<i>T. testaceus</i>”), and Germany with the mealworm (<i>Tenebrio molitor</i>) – rearing in the latter country will take place at the institute’s insectarium. Along with the kits, participating families will be briefed in terms of insect production and accompanied by the local consortium partners.</p> <p>During the project, these kits will be put to the test, evaluated and modified in case of need in order to suit local conditions, following the farmers’ feedbacks.</p> <p>In order to develop accepted insect product types, national surveys will be performed in which participants can choose among different types, (fermented, smoked, home-canned or as deep-fried crackers) and can also make own suggestions. The preferred techniques will be developed and evaluated</p>

by the consortium in terms of food safety and sustainable practicability under tropical conditions.

For the raw, cooked, and preserved insects, sensorial, compositional, and microbiological parameters will be selected, determined, and evaluated, so that local public health agencies will be able to assess the quality of these products in the future. This assessment will be done on species level, as it is known that these quality parameters are affected by species and rearing system, among others.

To assess the acceptance (and thus practicability) of the project, farmers and consumers will be interviewed in relation to their experiences and expectations with rearing, processing, and consuming these insects resp. their products. Again, this evaluation is done on national level and seeks to pinpoint the (a) safest and (b) most accepted product.

Germany was asked to coordinate the project. Within the consortium, the coordinator is *primus inter pares*, and decisions will be made democratically. Results will be published in many ways, both in scientific, peer-reviewed journals in English and in popular magazines and digital media, in these cases also in Thai, Khmer, and German.

