**Call for collaborative PhD projects**

**Chinese Academy of Agricultural Sciences - Wageningen University**

**Joint PhD Programme**

**2019**

**Background Information**

To strengthen the collaboration between Wageningen University (WU) and the Chinese Academy of Agricultural Sciences (CAAS), WU and the Graduate School of the Chinese Academy of Agricultural Sciences (GSCAAS) started a collaborative PhD programme. The programme, that runs from 2016 to 2020, provides an opportunity to set up joint research projects. It comprises a total of 100 PhD projects (approximately 20 projects per year). The programme involves a 4-year sandwich PhD where the PhD candidates perform the major part of their research at CAAS and spend at least 18 months in Wageningen, divided over two periods: 6-8 months at the start of the project 8-12 months at the end of the 4 years.

**Call for collaborative projects**

We invite academic staff of WU and CAAS who are interested in this programme to submit a joint project. You are especially encouraged to submit proposals in the following interdisciplinary strategic themes (see Annex 1 for description of themes):

* A Global One health
* Resource Use Efficiency
* Resilience
* Metropolitan Solutions
* Synthetic Biology

**Note:**

* A cluster of PhD projects around specific theme is also possible. In this situation it is recommended that more than one WU chair group is involved.
* When WU or CAAS scientists would want to collaborate but do not have a point of entry with the other institute then please contact the two programme coordinators:
  + Mingjun Zhang ([zhangmingjun@caas.cn](mailto:zhangmingjun@caas.cn)) and
  + Claudius van de Vijver ([claudius.vandevijver@wur.nl](mailto:claudius.vandevijver@wur.nl))

**Deadline for submission: 15 February 2019**

Please send your submission by 15 February 2019 to the programme coordinators:

* Mingjun Zhang ([zhangmingjun@caas.cn](mailto:zhangmingjun@caas.cn)) and
* Claudius van de Vijver ([claudius.vandevijver@wur.nl](mailto:claudius.vandevijver@wur.nl))

The submission should include:

* Title of the proposed project
* A short proposal (max 500 words) of the intended research
* Information of WU and CAAS scientists involved in the project including:
  + Name
  + Affiliation (CAAS Institute of WU Chair Group)
  + Email
* A statement in which the joint intent of collaboration in this PhD project between a WU group and CAAS institute is described, including the financial arrangements and signed by both parties.
* Optionally1: Name of the proposed PhD candidate and his/her CV when you have a candidate.

**1Note with respect to the PhD candidates:**

* + Once the project has been accepted by CAAS-WU selection committee in May 2019 the candidate must accordingly apply to the programme at the Graduate School of CAAS (GSCAAS)
  + When no potential candidate is known you can still submit a proposal. In this situation please send an email to GSCAAS ([zhangmingjun@caas.cn](mailto:zhangmingjun@caas.cn)) with a highlight of the proposal (max 100 words). GSCAAS will include this highlight in a call for PhD applicants on their website. PhD Applicants will be asked to apply to the supervisors (with a cc to GSCAAS and WU coordinators, [zhangmingjun@caas.cn](mailto:zhangmingjun@caas.cn) and [claudius.vandevijver@wur.nl](mailto:claudius.vandevijver@wur.nl) resp.). Accordingly the supervisors select the preferred candidate and inform the GSCAAS and WU coordinators. Deadline for the final selection of these candidates must be **1 May 2019**
  + In case that there has been no contact between CAAS and WU scientists it should be noted that initiation of the contact should not be done via the potential PhD candidate.

**Conditions to participate in the Wageningen-CAAS PhD programme:**

1. The PhD candidate

*For PhD candidates to be eligible they must meet the following criteria:*

* English proficiency according to the demands of Wageningen University (see: <https://www.wur.nl/en/Education-Programmes/PhD-Programme/English-language-requirements.htm>). Note: This requirement does not yet need to be fulfilled upon submission of the proposal but must be met upon the start of the programme on the first of September 2019
* Candidates must obtain their MSc degree before 1 September 2019

1. Financial arrangements

* *The CAAS Institute will cover:*
* A basic allowance for living costs for the duration of the project, including the required living allowance of the PhD candidate in the time that (s)he is in Wageningen\*
* All local research expenses
* Travel costs of candidates (2 return tickets)

*\**  According to Dutch Immigration law this allowance should at least be € 1192,- . Note that in the application it should formally be stated by the CAAS supervisor that he/she will pay the allowance in Wageningen.

* *The Wageningen University Chair Group will cover:*
* The standard WU tuition fee of a minimum of €1000 for each month the candidate spends in Wageningen
* All local facilities required for the candidate at Wageningen University
* The candidate’s visa costs
* At least one trip of the Wageningen supervisor to China
* € 5,000 for PhD training and education activities of which half is covered by the chair (Education back pack) and the other half by the Wageningen Graduate School which the candidate will be member of.

**ANNEX 1: STRATEGIC THEMES**

**A Global One Health**

Controlling the risks of disease outbreaks and reducing endemic infectious diseases are crucial to food security, public health, climate change and biodiversity. We use the phrase ‘A Global One Health’, as it reflects the interconnectedness and global nature of health care for humans, animals, plants and the environment. Many health risks can be controlled through effective interventions consisting of an adequate and varied food supply, hygiene, medicines, vaccines, vector control and crop protection. A sustainable and shared approach requires an integrated analysis of infectious diseases, with contributions from various knowledge domains. We perform research into infectious diseases, vectors, ecology, epidemiology, healthy agriculture (animal health and plant health) healthy nutrition and intestinal flora, food security and safety, and social health issues. Through a system approach, we provide an essential contribution to improving the health of people, animals and plants.

**Resource Use Efficiency**

A more intensive use of natural resources places increasing pressure on biological systems and on production and consumption systems in agriculture. Due to increasing global urbanisation, the distribution of the flow of energy, materials and waste is shifting on a large scale, and the quality of ecosystems (for example soil and water) is under pressure. The flow of nutrients, residue and waste is becoming concentrated in prosperous, densely populated urban areas, while elsewhere the soil is becoming depleted. We are investing in the transition to a more sustainable and efficient system of production and consumption. We are developing new knowledge and technology to deal more efficiently with the available raw materials. We are changing primary production streams through new combinations of various sectors, product groups and raw materials. We are working on the intelligent closure of previously separate cycles of energy, materials and nutrients through the optimal use of plant and animal sources. In addition, we are contributing to a high-efficiency revolution in the use of raw biological materials through the efficient conversion and distribution of streams, raw materials and products, as well as the prevention of waste and disposal of nutrients. This transition is also accompanied by new business opportunities and risks, which were previously unknown. For the effective support of this transition, governance is crucial; new networks must be formed between the most important actors in production and consumption, innovations in institutions must be required and new practices must be developed. Socio-economic analyses show how this transition can be shaped.

**Resilience**

Resilience is an important property not only of natural ecosystems, agro-ecosystems, and economic and social systems, but also of biological systems such as humans, animals, plants and microbes. The resilience of a system determines its response and adaptation to sudden, non-linear changes such as rapid technological progress, climate change and socio-economic changes. The reactions in the systems are complex and are determined by interaction with other systems and reactions between different scales. We are already working on resilience in various scientific areas. Many of the underlying principles, such as mathematical and experimental approaches, are universally applicable. As a result, the application potential is great. This is illustrated by the current work on the resilience of livestock, tropical rain forests, food supply chains and climate-resistant agriculture. To deepen and expand the research on resilience, we are working on new interdisciplinary applications for resilience.

**Metropolitan Solutions**

By 2050, 70% of the world’s population will live in cities. As a result, cities will to an increasing degree face issues concerning the sustainability and quality of life. This concerns aspects such as food security, mobility and logistics, the availability of water, dealing with raw materials and waste, health and well-being. The metropolitan city is simultaneously an incubator for creative solutions, a precursor of social and technological sustainability innovations, an important player on the world stage and a specific social and ecological system. In this way, the metropolitan city also serves as a ‘living lab’ to design, test and

disseminate solutions to these problems. We are committed to metropolitan solutions in order to arrive at *smart cities*: cities and metropolitan regions that – in close relationship with the surrounding rural areas – are liveable, healthy, resilient and cyclical. For instance, we understand that green areas in the city play a key role in business climate, safety (water storage), liveability and health. The Amsterdam Institute for Advanced Metropolitan Solutions (AMS) and the Delta Alliance are two of the first initiatives in this field. We would like to expand these with new international initiatives and networks.

**Synthetic Biology**

Acquired knowledge on genetic material as a building block for life has increased drastically. We can use this knowledge to design new biological systems. This offers a world of possibility for improving the quality of life. However, the application of synthetic biology is still in its infancy. At present, work is taking place only with biomolecules and single-cell organisms, such as bacteria and yeasts. Over the long term, our research will contribute to evocative aspects such as production platforms for energy, new biologically inspired materials, refined diagnostics with the aid of biosensors and the production of pharmaceuticals. This also elicits questions about what ‘life’ is and how science and society can mutually ensure responsible innovation – for example when it comes to societal acceptance, controlling risks and protecting intellectual property. The extra investments in synthetic biology provide opportunities for successful international competition in this area, in which natural scientists and social scientists work closely together.