



K O N I N K L I J K E N E D E R L A N D S E
A K A D E M I E V A N W E T E N S C H A P P E N

PROGRAMME FOR STRATEGIC SCIENTIFIC ALLIANCES BETWEEN THE PEOPLE'S REPUBLIC OF CHINA AND THE NETHERLANDS

Royal Netherlands Academy of Arts and Sciences (KNAW)

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Introduction

In 1997, the Netherlands Minister of Education, Culture and Science reached an agreement with the Chinese Ministry of Science and Technology (MOST), the Chinese Academy of Sciences (CAS) and later with the Chinese Ministry of Education (MOE) about the desirability of exploring the possibilities for further structured and strategic concentration of the existing cooperation in the fields of science and technology. The intention was expressed to pursue cooperation, which in the long-run would lead to the establishment of so-called Strategic Scientific Alliances between one or more selected universities or research institutes/State Key Laboratories in China and one or more similar institutions in the Netherlands in a limited number of research fields. This intention has been recorded in the Agreements on



Scientific Cooperation and Exchange with MOST and CAS, and in the later signed Memorandum of Understanding on Educational and Scientific Cooperation and Exchange with MOE.

Following these developments, the Royal Netherlands Academy of Arts and Sciences (KNAW) was asked by the Netherlands Minister of Education, Culture and Science (OCW) to select, in consultation with the Chinese counterpart organisations, a number of priority research fields suitable for this new type of cooperation. Subsequently, from the initial KNAW selection, the Netherlands Minister of OCW, after consultation with a wide representation of Netherlands science and technology organisations, chose three priority research fields: material sciences, biotechnology and drug research with an emphasis on biopharmacy, and environmental research.

In July 1998, a fact-finding mission to China was carried out by a delegation of Dutch researchers in the three selected priority research fields, co-chaired by OCW/KNAW.

In 1999, the delegation presented its *Rapport m.b.t. mogelijk strategische wetenschappelijke en technologische samenwerking met China*, a report in which the findings of the delegation during their visit and their recommendations to the Minister regarding the possibilities for a new Programme Strategic Scientific Alliances between China and the Netherlands were formulated.

KNAW proposal

In July 1999, KNAW was requested by OCW to draft a proposal regarding the possible set up and implementation of a Programme Strategic Scientific Alliances between China and the Netherlands. The proposal was presented to the Minister in October 1999.

In September 2000, a Covenant was signed between the ministry of OCW and KNAW appointing KNAW as the Dutch organisation responsible for realisation and execution of the programme. In the Covenant a framework is agreed for the manner in which and the conditions subject to which the programme will be realized.

In February 2001, the Minister of OCW and the Minister of MOST signed a new Agreement on Scientific Cooperation and Exchange in which MOST was identified as the Chinese organisation responsible for the programme. In the agreement with CAS and in a supplement to the Memorandum of Understanding with MOE, both organisations indicated their interest in the programme, pledging to encourage research institutions resorting under their auspices to apply for participation in the programme.

The most recent Memorandum of Understanding on scientific cooperation and exchange between the Ministry of Education, Culture and Science of the Netherlands and the Ministry of Science and Technology of the People's Republic of China signed on 1 September 2011 provides the framework for the Final Phase in the Programme Strategic Scientific Alliances.

The programme will be carried out in accordance with the Work Plan signed by KNAW and MOST, with this Programme Brochure included as annex. The Guidelines and the Call for Proposals for the Dutch applicants and the 'Notice' for the Chinese applicants will be published on respectively the KNAW and MOST websites to inform applicants on the call for proposals for the Strategic Alliance Phase.



Aims, objectives and focus of the programme

Aim of the programme

Aim of the programme is to establish a new form of structural long-term scientific cooperation, 'Strategic Scientific Alliances', of mutual benefit to the Netherlands and China in three research fields.

Definition of Strategic Scientific Alliances

A Strategic Scientific Alliance is a cooperation form in which the Dutch and Chinese partners will participate equally in structural research activities, PhD-training, and other training and knowledge-sharing activities for post-docs and senior researchers. These activities can take place either in China or in the Netherlands. The alliance will be expected to be instrumental in the formation of a scientific research network which will further stimulate mutual exchange of information and knowledge and shared use of available equipment, research facilities, methods and techniques. Complementarity of expertise and available facilities will be essential. Participants are expected to develop a unique joint line of research within the alliance.

Focus of the programme

The programme will focus on basic and strategic research. However, participation of industrial research partners supporting the programme financially or in another material way within the scope of the programme will be encouraged.

Priority fields of research

The programme will be limited to the following three fields of research: material sciences, biotechnology and drug research, and environmental science. At the outset of the programme, the three priority research fields were seen in their broadest sense, allowing expressions of interest and applications for cooperation in a wide variety of themes within these fields.

Participants

Funded participation will be limited to publically funded universities and research institutes in China and the Netherlands involved in high quality research in the above mentioned three fields of research. In the Netherlands, publically funded universities, university medical centers and KNAW and NWO institutes are eligible.

Responsibility for the execution of the programme

In the Netherlands, the Royal Netherlands Academy of Arts and Sciences (KNAW) is responsible for setting up, implementing and administrating the programme, including allocation of funding, and assessment and selection procedures.

The Ministry of Science and Technology (MOST), Department of International Cooperation, is responsible for organisation, implementation and administration of the programme on the Chinese side, including allocation of funding. The relevant expert systems will be entrusted with the organisation and execution of the quality assessment of the programme on the Chinese side.

Basic assumptions regarding the research eligible for participation in the programme

- 1 The research should be of a basic and strategic nature with a well-defined scientific mission, aims and objectives. Ad hoc contract-research or research focusing on design activities will not be acceptable, neither will short-term 'problem-solving' research.
- 2 The research should have a long-term scope and the potential to lead to internationally significant scientific developments.
- 3 On the Dutch side as well as on the Chinese side there should be a research capacity which is internationally recognised as being good to excellent. The quality of the research capacity will be ascertained from the level of scientific publications, facilities and staff.



- 4 The proposed research should offer the possibility of establishing, within several years, a form of structural cooperation ('strategic alliance') with a clear scientific mission and a coherent research-programme based on that mission.
- 5 Research within the 'strategic alliances' should be focused on sustainable long-term cooperation that will demonstrably advance scientific knowledge in both countries in that particular field. Mutual benefit, national and international relevance of the research will be assessed.

Criteria

The most important criteria in the programme will be scientific quality and reputation of the participating research groups in China and the Netherlands and quality of the research proposal. Although proposals for new collaborative initiatives will be accepted, the extent to which existing scientific cooperation has already been proven in terms of mutual scientific benefit and 'commitment' will be one of the assessment criteria. Quality of the direct research environment, the 'embedding' of the research proposal, will also be one of the assessment criteria. More detailed information on the criteria is listed in the Guidelines.

Duration and Budget

The programme will have a maximum duration of 18 years, divided into four phases.

The budget for the programme on the Netherlands side is € 1.361.340,- annually. On the Chinese side MOST has agreed to match the financial input of OCW for the programme with 10 million RMB annually.

The budget will be necessary for:

- travel expenses and cost of living involved in the exchange of scholars
- cost of consumables essential to the research
- material costs and fieldwork
- bilateral workshops, symposia and conferences
- appointment of post-docs
- appointment of PhD-students (only in the programme and strategic alliance phases)

Set up

The programme will invite applications for projects through a system of open tendering.

The programme will be developed in four phases:

Preparatory Phase	(duration two years)
Project Phase	(maximum 12-15 projects, duration three years)
Programme Phase	(maximum four-five projects, duration five years)
Strategic Alliances Phase	(maximum three strategic alliances, duration four years)

Entry into the programme phase was only be possible prior to the project phase. Each phase formed a complete and self-contained unit that was closed with a scientific quality assessment procedure. Based upon the outcome of the scientific quality assessment, at the end of each phase the Ministers of OCW and MOST decided whether or not to continue the programme into the next phase.

In the first three phases, a funnel model was used in the selection. The number of participating partnerships within the programme decreased after each phase. However, the nature of the cooperation in each consecutive phase intensified, and increased in complexity and scope.

However, entry into the Strategic Alliance Phase is open for applications from Sino-Dutch teams from Chinese universities, state key labs and research institutes eligible to MOST and to Dutch universities, university medical centers and KNAW and NWO research institutes. The funnel model is abolished in the



Strategic Alliance Phase. The reason for this change is due to policy changes at MOST. This change is validated by the Work Plan, signed by MOST and KNAW on 14 December 2015. The joint research proposals ultimately selected by this programme will receive a four-year period of funding in the final phase of the programme. After this funding period the strategic alliances are expected to be maintained and financed by the Netherlands and Chinese universities or research institutes involved as a structurally embedded part of their regular main research activities.

Preparatory Phase (two years)

The programme commenced with a preparatory or exploratory phase. This phase, with a duration of two years, focused on identifying high quality research groups in China and the Netherlands and on specifying the research theme's within the priority fields with the highest chance of success. This phase ultimately lead to the selection of projects to be implemented in the next phase.

The main activities within this phase were:

- Inventory
- Call for Expressions of Interest
- Delegation visits to China
- Bilateral agenda-setting meetings in the Netherlands
- Call for Proposals
- Assessment and selection

Inventory

Relevant top-level research groups in the Netherlands and their research themes were identified by KNAW. The Chinese authorities involved were asked to provide similar information about potential Chinese participants, shedding light on the quality of the research groups and the nature of their research.

Call for Expressions of Interest

By means of a written 'Call for Expressions of Interest' the programme was brought to the attention of relevant groups in the Netherlands. Reactions to this 'Call' contributed to an inventory of the level and nature of interest in the programme amongst potential participants in the Netherlands.

Delegation visits to China

Aim of these visits was to obtain insight into the quality and research focus of potential participating Chinese universities or research institutes. Delegation members consisted of Dutch top-level scientists representing various themes of research in the three priority fields. The scientists were accompanied by KNAW programme coordination staff. One delegation visit per priority research field was realised.

Agenda-setting meetings in the Netherlands

Following the Call for Expressions of Interest the agenda-setting meetings were held. Aim of these meetings was to stimulate discussion and exchange of ideas amongst potential participating and other interested parties, in order to gain insight into the possibilities for cooperation, with a view to narrowing down the options and focusing on the most promising research activities within the priority fields for this programme.

One meeting per priority research field was held. The agenda-setting meetings were open to a large number of participants from all possible interested parties in the Netherlands, including industry. Chinese scientists in each of the priority research fields were invited to participate in these meetings.



Call for Proposals

KNAW assessed the findings of the Inventory, Call for Expressions of Interest, and the agenda-setting meetings. On the basis of this assessment KNAW sent out a targeted Call for Proposals.

Selection

The project proposals resulting from this Call for Proposals were assessed by KNAW. From these proposals the best projects were selected.

On the Chinese side a similar assessment and selection procedure was carried out.

Mutual agreement on selected projects (joint central committee)

Both national selection committees assessed the projects and reached a final judgement on each project with a short written motivation of the decision based on scientific quality as the main criterion. The projects were listed by both national committees and ranked according to their scientific merit and priority. Both lists were compared in a joint central meeting. A small central committee consisting of the chairmen of both national committees assisted by an appropriate number of members of the national committees (scientific experts in the priority research fields) compared the lists and agreed upon one final list. A small number of officials with decision-making power of the participating authorities, KNAW and MOST, took part in this joint central meeting enabling immediate official approval of the selected projects.

Project Phase (three years)

In the project phase of the programme the first projects commenced. In this phase the largest number of projects (cooperation forms) were implemented.

For the fields of material sciences, biotechnology/drug research and environmental science a maximum of five projects per priority research field was approved, in total 15 projects.

In this phase the focus was on project-cooperation at the level of senior-researchers and post- docs. In this phase there was no funding for training activities or for appointment of PhD- students.

Projects had a total duration of three years.

Monitoring and Assessment

In order to monitor progress project leaders were requested to produce annual progress-reports according to KNAW/MOST guidelines.

Closing workshops

The Project Phase concluded with a final workshop for each of the priority fields of research.

Assessment of the Project Phase after three years

For all projects was required:

- An end of project completion report at the end of year 3 including:
 - a final financial declaration for year 3
 - a list of joint publications and other scientific output

Selection of programmes for the Programme Phase

For those projects which wanted to continue and deepen the cooperation into the Programme Phase:

- An application for the Programme Phase and a final progress report for assessment were due 6 months before the end of year 3



Together with the final project report, applicants were requested to submit a proposal for expansion and continuation of the project in a more structured cooperation form in the Programme Phase. The cooperation form for the next phase in the programme was a scientific cooperation programme in which, besides senior researchers and post-docs, participation of PhD-students was funded.

Assessment was made on the basis of the proposal for the Programme Phase, the final project report, with emphasis on presentation of the scientific results attained, and the future potential of the research activities as demonstrated at the final workshop.

Assessment procedure and criteria

Projects were assessed on criteria of quality, relevance, productivity and viability. Assessment of the projects was carried out by one peer review committee consisting of international experts in the priority research fields. Attendance of the final workshops by the peer review committee was a part of the quality assessment procedure.

A parallel peer review procedure was carried out by KNAW and MOST. On the basis of the findings of the peer review committee, a small central KNAW-MOST committee agreed on the projects to be continued in the next phase of the programme.

Programme Phase (five years)

This phase focused on programme cooperation in which, besides the participation of tenured staff and funding for appointment of post-docs, already existing in the project cooperation, funding was made available for appointment of PhD-students.

In order for the projects to be effective, cooperation in the form of research programmes with a capacity of two-three senior researchers (project leaders), two-three post-docs and two-three PhD-students was envisaged. Funding of six projects selected from the priority fields was realised.

In this phase the projects had a duration of five years.

Monitoring and assessment

In order to monitor progress programme leaders were requested to produce annual progress-reports according to KNAW/MOST guidelines.

Beside these annual progress reports, after three years a more extensive interim progress report was required. A mid-term scientific review was organized. After a positive progress assessment by KNAW an extension for the remaining period was granted.

Assessment of the Programme Phase after five years

For all projects was required:

- An end of project completion report at the end of year 5 including:
 - a final financial declaration for year 5
 - a list of joint publications and other scientific output



Strategic Alliance Phase (four years)

This phase will focus on structural strategic programme cooperation in which, besides participation of tenured staff and funding for appointment of post-docs, there will also be funding for appointment of PhD's.

The strategic alliances will have a duration of four years.

Cooperation Form

The strategic alliance is envisaged as a cooperation form in which the Dutch and Chinese partners will participate equally in structural research activities, PhD training, and other training and knowledge-sharing activities for post-docs and senior researchers. These activities can take place either in China or in the Netherlands. The alliance will be expected to be instrumental in the formation of a scientific research network which will further stimulate mutual exchange of information and knowledge and shared use of available equipment, research facilities, methods and techniques. Complementarity of expertise and available facilities will be essential. Participants are expected to develop a unique joint line of research.

Mission

The mission of a strategic alliance will include:

- Formulation and coordination of a coherent joint research and education project
- Training and exchange of research staff (post-docs, senior research staff and Phd-students) participating in the project

Focus

The strategic alliance will focus on:

- Innovative scientific research and education in an international environment
- Stimulation of training and exchange of personnel and knowledge in the selected field of research
- Complementary input of expertise and facilities

Activities

Activities eligible for funding within the programme include:

- Exchange of research staff
- Organisation of bilateral symposia and workshops
- Joint research projects
- Joint publications and other scientific results
- Appointment of post-docs
- Appointment of PhD's
- PhD education and specialized training for post-docs and research staff

Selection of projects for the Strategic Alliances Phase

The Strategic Alliance Phase is open to Sino-Dutch teams wishing to collaborate in a joint research project in the Strategic Alliance Phase of PSA. For more information on eligibility, please check the Guidelines.

Assessment procedure and criteria

Project proposals will be assessed on criteria such as quality of the proposal, of the research partners, of the Sino-Dutch cooperation and of the research environment. Assessment of the project proposals will be carried out by two parallel peer review committees. The Dutch peer review committee will consist of (inter)national experts in the priority research fields.

It is envisaged that a parallel peer review procedure will be carried out by MOST (or the relevant Chinese expert system) and KNAW. After the parallel assessment procedures have been finalized, a small central joint MOST-KNAW committee will compare the lists of the two sides and agree on the three projects to be recommended for funding in the final Strategic Alliances Phase of the programme. The committee consists



of an appropriate number of members of the respective national assessment committees (experts in the priority research fields) and officials from KNAW and MOST.'

Monitoring and assessment

In order to monitor progress strategic alliance leaders will be requested to produce annual reports according to MOST and KNAW guidelines.

For all strategic alliances is required:

- Annual progress reports must be submitted in parallel to MOST and KNAW at the end of each year including:
 - A list of joint publications and other scientific output
 - An annual financial declaration
 - A budget plan for the following year

Besides these annual progress reports, after two years a more extensive interim progress report will be required in both China and the Netherlands. After a positive progress assessment by KNAW an extension for the remaining period will be granted.

The financial input from the programme will be limited to a single four-year period, after which the alliances will be expected to have developed into structural cooperation forms firmly embedded in the regular research activities of the participating universities and/or research institutes. The universities and/or research institutes concerned will be expected to take on financial responsibility for continuation of the alliances after this four-year period.

Final assessment of the Strategic Alliance Phase after four years

All Strategic Alliances will be required to submit:

- A final completion report at the end of year 4 including:
 - A final financial declaration year 4
 - An overall final financial declaration of years 1-4
 - A list of joint publications and other scientific input
 - A plan for the independent future of the Strategic Alliance

An international peer review committee will assess the Strategic Alliance Phase of the programme. The strategic alliances will be assessed on the basis of the final strategic alliance report and site visits to the participating universities and/or research institutes. Together with the final report, applicants will be requested to give financial guarantees (for the funding of staff and research activities) for the continuation of the Strategic Alliance beyond the programme.

On the basis of the findings of the Peer Review and results of the complete programme, KNAW will draw up a final total assessment report of the *Programme of Strategic Scientific Alliances between China and the Netherlands*.