



## MIRAI Post 2023

### Background

The past two phases of the MIRAI Project successfully facilitated the Swedish Japanese collaborations in research, education, and innovation. Aspirations of, and interest in, MIRAI continues to grow. Its third phase begins in January 2024, where collaborations between Sweden and Japan are encouraged and supported to take shape in more dynamic and interdisciplinary formats.

The MIRAI Project was officially established in January 2017 as a three-year project until the end of 2019, where seven Swedish and eight Japanese member universities joined together to expand academic collaborations. Following the success of the first phase, MIRAI 2.0 was launched in 2020 to further strengthen the Sweden-Japan academic network through activities including lectures, workshops, and PhD short courses, as well as an annual Research and Innovation week. A majority of these activities were proactively organized by four thematic expert groups (Ageing, Artificial Intelligence, Materials Science, and Sustainability) as well as an advisory group on innovation and entrepreneurship. The number of MIRAI member universities increased from 15 to 20 in MIRAI 2.0. While the outbreak of the pandemic posed unprecedented challenges to MIRAI's joint efforts to facilitate research collaborations, MIRAI 2.0 successfully implemented activities both online and physically in the four-year activity period through the end of 2023. A total of 51 seed funded research projects were formed during MIRAI 2.0, 44 of them were funded by the MIRAI universities and 7 of them were funded by Intsam Japan through Vinnova (Academia/Industry collaborations). Even though these research collaborations are recently initiated, they already show promising results, such as successful applications for external grants and joint scientific publications. So far, all of the teams who have completed their seed funded project report that they plan to continue their collaboration. A more thorough follow up of the results will be available in March 2024 when all the seed funded projects have submitted their final reports.

In January 2024, the MIRAI collaboration aims to take a new direction with a focus on Global Challenges, to be tackled collaboratively. By this, MIRAI aspires to contribute not only to the Sweden-Japan collaborations but also to global issues that should be discussed and handled across nations on the international scale.

## **Third Phase of MIRAI (2024-2026)**

During seven years of collaboration in two project phases, MIRAI has developed into a strong partnership, building on trust as well as a willingness to continue and further expanding the collaboration. In the third phase, the partnership will continue in a more sustainable and strategic structure, formed as a network to better enable long-term engagement. MIRAI should be the natural platform from where Japanese and Swedish universities jointly create and maintain collaborations, within and outside academia.

A three-year activity plan is set to mark the first step of this new phase to secure a continued high level of activities and to provide clarity to the member universities. In this third phase, MIRAI embarks on a bold mission to tackle global challenges. The network provides researchers and students with advanced opportunities for transnational and transdisciplinary engagement. MIRAI researchers will collaborate to address global challenges and make societal as well as academic contributions. The MIRAI network provides them with a wide range of opportunities for interactions with stakeholders outside the university of their own affiliation, which include entrepreneurs and company representatives. Bottom-up approaches are the core of MIRAI's activity framework, where researchers and external stakeholders from both countries organize lectures and workshops and conduct collaborative research.

### **Global Challenges**

The United Nations Sustainable Development Goals (UN SDGs) provide the framework for MIRAI's endeavors. The foundation for the MIRAI partnership is the UN SDG #17, "Partnerships for the Goals," which aims to "strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development." In addition to SDG #17 that MIRAI has set to strive in common, several more concrete global challenges will be selected with the aim to jointly tackle them. With the new Global Challenges approach, the MIRAI collaboration is taking a next step. Building on the efforts and work that have been carried out during previous years, the new phase will offer an opportunity to take the work in a new direction. The method will be to form new groupings called "Global Challenges Teams" around the following selected challenges:

Challenge 1: Health and an ageing population (Part of SDG 3)

Challenge 2: Climate adaption, disaster and risk management and prevention (Part of SDG 13)

Challenge 3: Resilient cities and communities - policies, strategies, local government and urban planning (Part of SDG 11)

Challenge 4: Materials for Energy Conversion and Storage: renewable energy, solar energy conversion, electrification, sustainable processes and use of resources (Part of SDG 7)

Since these challenges are complex, "Global Challenges Teams" will be formed based on diverse subject areas, sectors and approaches to increase the possibilities to be successful and to come up with creative solutions. Our commitment to the Global Challenges will be integrated into an effort to promote new and innovative ways of working together transdisciplinary, welcoming contributions from experts in all scientific fields, ranging from natural sciences, medicine, life sciences and engineering to social sciences and humanities.

### **Focus and Aims**

Research collaborations are the core of MIRAI's activities, and the benefit of researchers and PhD students is treated as a priority. Students at the master's level may also be invited to participate in events and activities when relevant. Examples of activities suitable for master's students can be

thesis writing abroad and internship opportunities. Early career researchers will continue to be a particularly important focus of this consortium. By using the experiences and knowledge from the past two phases, MIRAI will build a platform that accumulates expertise from a wide variety of areas to focus on global challenge questions through a transdisciplinary and cross-sectoral approach. MIRAI also aspires to increase the shared use of national research infrastructures in multidisciplinary ways across all Global Challenges Teams.

The following advanced goals have been set for the third phase of MIRAI:

Aims:

- Contribute to solving global challenges by setting up groups where researchers from MIRAI universities work together across and beyond institutions, countries, disciplines and sectors.
- Create an environment to promote long-term research collaborations.
- Facilitate PhD student and researcher mobility.
- Promote innovation and entrepreneurship in education and research and facilitate joint efforts between academia, industry and external partners.

## Activities in the Third Phase

Research activities will be central for the MIRAI Project. Educational activities will offer students and early career researchers the opportunity to gain academic and industry networks across the two countries. Planned activities include the following.

- **Research and Innovation week (R & I week)**

One of the primary activities is the Research and Innovation week (R & I week). This event will be held as a physical event once during the three-year activity plan.

The R & I week provides a platform where researchers and PhD students from Sweden and Japan can meet, present their work, and establish connections for future collaborations. In addition to workshops and other activities, university leadership meetings will be planned as part of the event program, where the representatives of administration and university leaders discuss specific themes or issues. The R & I week provides a meeting place to establish networks and stronger relationships between MIRAI members.

In addition, the R & I week functions as a platform to develop partnerships beyond the MIRAI community. As a way of finding new partners and deepening existing relations, MIRAI will invite external stakeholders, from both within and outside academia, to the R & I week, including company representatives, funding agency representatives and policy makers.

The outcomes of MIRAI's new endeavors to tackle global challenges can best be maximized by collaborating with external partners and civic communities. The R & I week will be utilized to showcase MIRAI's achievements to stakeholders outside MIRAI, as well as to facilitate conversations with them.

The R & I week will be an opportunity for MIRAI to take a step beyond our regular activities to explore multidisciplinary, multi-skilled, multi-national, and multi-scaled approaches to research and educational engagement. For example, during the R & I week, multi-national consortiums other than MIRAI may be introduced to share strategies on how to manage global networks; small-scaled satellite events may be organized in conjunction with the R & I

week to facilitate networks among young talents or to introduce startups by MIRAI's researchers.

- **Global Challenge Seminars**

Global Challenge Seminars will be organized by each Global Challenges Team (GCT) as an on-site event in either Sweden or Japan. The Global Challenge Seminars can be arranged jointly by more than one Global Challenges Team (GCT). These seminars will be more operational and focused and serve as a platform where researchers can matchmake and collaborative research projects can be initiated and further developed. Researchers from all the MIRAI member universities as well as non-academic actors will be invited to join the seminars with common strives to find solutions to each specific challenge. The Global Challenge Seminars will be one of the key activities of MIRAI where stakeholders meet across and beyond institutions, countries, disciplines, and sectors with the purpose of making significant scientific contributions. The number of seminars and locations are to be determined based on further discussions.

- **Skillset Training Sessions**

MIRAI will offer Skillset Training Sessions to provide researchers, PhD students and administrative staff with the skills necessary to successfully build and run international academic projects. One or more of these events may feature professionals from funding agencies and other non-MIRAI representatives. These opportunities are intended to facilitate research collaborations by helping to remove barriers for researchers to start interdisciplinary research projects at international scales and to increase the understanding of each other's culture and societal conditions as the basis for future cooperation activities. Further discussions are required to crystallize activities that can benefit by being organized jointly within MIRAI. Examples of topics to be included in the Skillset Training Sessions:

- Responsible internationalization, academic freedom, ethics, research integrity - building responsible international partnerships
- Intercultural competence – Smooth and effective communication across cultures
- Utilization and commercialization of research results
- Writing grant applications for international research projects
- Administrative skillset training sessions (Using MIRAI as benchmarking arena for university staff)

The number of sessions and locations are to be determined based on further discussion.

- **Seed Funding for Collaboration in Research**

During the MIRAI 2.0 period, seed-funding opportunities brought successful outcomes. Because of the success in MIRAI 2.0, the third phase of MIRAI will continue to provide seed-funding opportunities for collaborative projects between Swedish and Japanese researchers. The focus for the seed funding grants in the third phase will be on the Global Challenges approach promoting transdisciplinary and cross-sector initiatives. The aim is also to further develop the method of launching seed funding grants. Besides from collaborative projects, we have during 2023 successfully included the opportunity to apply for and arrange short courses for PhDs and Postdocs. The exact content and scope of the future seed funding grants will be further discussed depending on external grants. However, the format provides excellent opportunities for bottom-up organic collaborations and ideas to arise (some examples are Research schools, mentorship programs etc). Just as for the previous seed

funding, the project teams that receive MIRAI’s funds will be strongly encouraged to continue their collaborations beyond the funded period by applying for larger external funds. In the next phase, MIRAI will provide extended research funding support to the seed funded teams with the aim of increasing the number of successful applications for external grants.

- **Early Career Researcher (ECR) Mobility Program (Pending Funding from STINT or other external funds)**

MIRAI promotes the mobility of researchers by assisting activities such as seminars, workshops and short courses. Students and staff members may be part of these programs depending on the contents. When possible, external funding opportunities will be sought to support activities. In the new phase, MIRAI plan to launch a mobility program to enable longer research visits for PhD students (joint supervision) and early career researchers from Sweden and Japan. The duration of each stay will be 5-18 months, giving the ECRs a much richer opportunity to expand her/his international network and develop the skills needed to become a future leader of Japanese-Swedish research projects. The MIRAI ECR Mobility Program will serve two aims of this project as it will also promote long-term research collaboration between Japan and Sweden.

## Financing

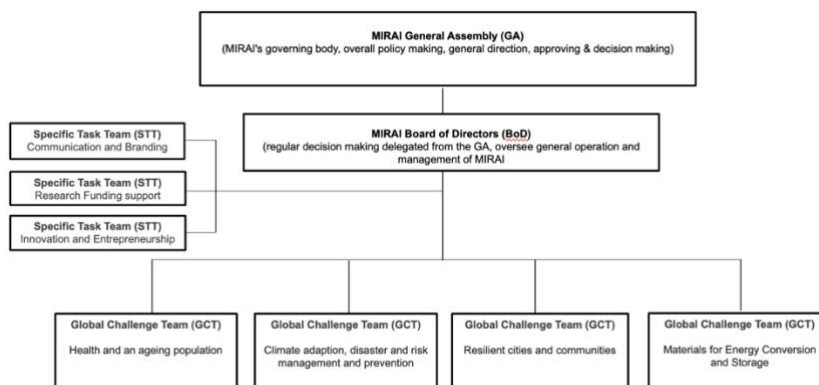
Funding of MIRAI’s activities will generally be conducted separately by Sweden and Japan depending on the funding sources and event contents. Possible financial resources include membership fees and external grants from the government or other funding agencies. It is however important that the respective sides (SE and JP) discuss the budget and funding with each other to have a joint view on the funding available.

Researchers and Project Managers are encouraged to collaborate with grant support officers of their own universities in order to expand the possibilities to acquire external grants. MIRAI will assist researchers with obtaining information about external funds and other opportunities within and outside the network.

## Organization and Structure

### Organizational Chart

The purpose of this organizational chart is to visualize the overall organizational structure and all the groups/teams.



## **1. General Assembly (GA)**

General Assembly is MIRAI's central body responsible for the general direction as well as the decision making of any activities, organization, and structure associated with the MIRAI Project. The GA consists of one representative per university, usually the Vice Chancellor or a person whom the Vice Chancellor appoints to be their representative. The GA is co-chaired by the coordinating universities.

## **2. Coordinating Universities (Project Coordinators)**

One (1) member university is selected from each country to play coordinating roles ("Coordinating University"). The Coordinating University will assign one or two individuals ("Project Coordinators") from their own institution to undertake tasks on the working level.

Coordinating Universities will be selected according to the rules and regulations of each country. Rotation of coordinating universities is recommended every three years to share tasks and responsibilities among all the member institutions. For the activity period 2024-2026 the coordinating universities are Kyushu University, Japan, and Umeå University, Sweden.

Coordinating Universities and Project Coordinators are responsible for:

- Project communication (e.g., MIRAI website, reporting and distributing information to member universities etc)
- Liaison with funding agencies, authorities and other stakeholders relevant for MIRAI
- Coordination of GA meetings
- Coordination of applications to external funding agencies
- Coordination of joint seed funding
- Assisting joint activities
- Administration of MIRAI's budget
- Manage the Board of directors

## **3. Board of Directors**

A Board of Directors will be formed, building on the experiences from the MIRAI 2.0 Responsible Committee but formalized with a more active mission/task. The Board of Directors is composed of four members, the leadership representatives from the two coordinating universities plus two additional members (one from each country) appointed by the General Assembly. The coordinating universities is co-chairing the Board of Directors. The Board of Directors will function as a working group and act as a representative on behalf of all MIRAI universities. Its tasks and responsibilities include:

- Overseeing the general operation of MIRAI and the progress within the GCT's.
- Providing direction and foresight for the efficient implementation of MIRAI activities.
- Regular decision-making in between GA meetings for issues relating to MIRAI activities.
- Ensuring smooth and efficient communication between the Japanese and Swedish side.
- Supporting the Coordinating universities with preparations for General Assembly Meetings
- Keeping dialogue with external stakeholders such as government representatives, funding agencies and companies.

The Board of Directors can decide to invite additional members, such as GCT co-chairs or company representatives, as temporary non-voting members whenever their expertise or advice on a particular topic is needed.

#### **4. Global Challenges Teams (GCT)**

The basic framework consists of four Global Challenges Teams (GCTs). To maximize the outcomes and to come up with creative solutions to global issues, these groupings will be formed based on a diversity in subject areas, sectors and approaches with the shared idea to work in the same direction towards a common objective.

Each group consists of approximately 10 researchers (5 members from each country). Two co-chairs (one from each country) are responsible for ensuring the smooth operation of their own group. The groups should also have members from stakeholders outside the universities, in order to have a diversity of perspectives.

Both the benefit and responsibilities should be shared among all the MIRAI universities. The ambition is to distribute the workload equally between the member universities. The responsibility as co-chair may rotate no more than once every year. Regarding the selection of the group members, a survey will be conducted at the beginning of the third phase, or as soon as the selection guideline is ready, to ask each university for the preference of which groups that they wish to join and the nomination of researchers to contribute to the groups.

##### **4.1 Coordinators for the Global Challenges Teams**

Each Global Challenges Team will have two coordinators, one from Sweden and one from Japan. When a university is appointed as co-Chair for a Global Challenges Team, that university should also appoint a coordinator for that team. The coordinators<sup>1</sup> are jointly responsible for support and assistance to the co-chairs to run meetings and activities hosted by the respective group.

#### **5. Specific Task Teams (STT)**

MIRAI will form smaller strong teams, consisting of approximately 2-3 representatives from each country, around three specific tasks, 1) Research funding support, 2) Communication and branding, and 3) Innovation and entrepreneurship. All MIRAI 2.0 member universities are asked to contribute in-kind with a human resource who can either act as coordinators for the Global Challenges Teams or be included in one of the three the Specific Task Teams.

##### **5.1 Research funding support STT**

Research funding support is an important aspect for the development of the MIRAI collaboration. GCT's and researchers that receive MIRAI's seed funding will be strongly encouraged to continue their collaborations by seeking external funding. In the next phase, MIRAI aim to increasing the number of successful applications for external grants by providing extended research funding support to early career researchers involved in MIRAI. By creating a Specific Task Team (STT) focusing on Research funding support, MIRAI will develop closer links to the Research support offices at the members universities. Research advisors from Swedish and Japanese universities will work closely together and in collaboration with the GCT's and the seed funded teams to provide information about potential funding sources and offer skillset training sessions on how to write grant applications

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<sup>1</sup> The coordinator could be the same person as the Project Manager.

for international research projects. The exact composition of the STT for Research Funding Support will be further discussed to ensure that their expertise matches the needs of each GCT.

## **5.2 Communication and branding STT**

MIRAI has developed into a strong brand and a lot of different activities are organized under the umbrella of MIRAI. However, the communication resources have previously been very limited, and this area has been appointed as an important focus area for the future MIRAI collaboration. Enhanced communication efforts are needed both in terms of communicating the achievements within MIRAI as well as the opportunities for researchers and other stakeholders. The exact composition of this group needs to be further discussed but could be arranged by including communication officers from the MIRAI universities, forming a group responsible for communication/branding, in close dialogue with the Coordinating universities / Board of directors.

## **5.3 Innovation and entrepreneurship STT**

Innovation and entrepreneurship are important components for the overall MIRAI collaboration. MIRAI's new endeavors to tackle global challenges can best be maximized by collaborating with external partners and civic communities. Utilizing innovation and entrepreneurship as essential tools is imperative to address global challenges and contribute to societal advancements.

MIRAI is dedicated to promoting innovation and entrepreneurship in education and research, fostering collaboration between academia, industry, and external partners. A Specific Task Team will be established to strengthen the ties with industry and external stakeholders for tackling MIRAI's global challenges. The team will focus on initiatives such as industry internships, collaboration with startup companies, and support for scaling up MIRAI's seed funded projects.

During the early stages of this third phase of MIRAI, a working group consisting of representatives from academia, holding companies, and industry will be formed. This group will formulate the specific tasks and composition of the Innovation and entrepreneurship STT. Insights gained from the MIRAI2.0 Innovation and Entrepreneurship Advisory Group (IEAG) will be invaluable in shaping these efforts.

## **6. Project managers at Member Universities**

Each member university selects at least one Project manager who is responsible for:

- Internal and external communication
- Support of own staff and management
- Contribution to joint applications
- When requested by the Coordinating University, assisting the organization and operation of MIRAI's events
- If selected as host university, support organization of Research and Innovation week

Opposed to MIRAI 2.0, project managers do not have to attend the meetings in the Global Challenges Teams (GCT's). The reason is both to lower the administrative workload and to minimize the meeting participants of each GCT so that the activities are driven even more proactively by researchers.

## **7. Membership**



- Member universities are expected to make institutional commitment to the aims and objectives of the MIRAI collaboration.
- Specific criteria of membership are established separately by Sweden and Japan. Accordingly, the decision on the approval of new members is made by each country.
- Associate membership (partnership) may be considered under special circumstances. The new membership, as well as the terms and conditions, should be approved by the GA.

## **8. Activity Period**

MIRAI's third phase commences on January 1, 2024, and its initial activity period is set for three years until December 31, 2026. During the initial activity period the ambitions of establishing a more long-term and sustainable network will be further discussed and crystallized.