Reference Document 9

Evaluation Axis and Index in the Next Mid to Long-Term Objectives (draft)

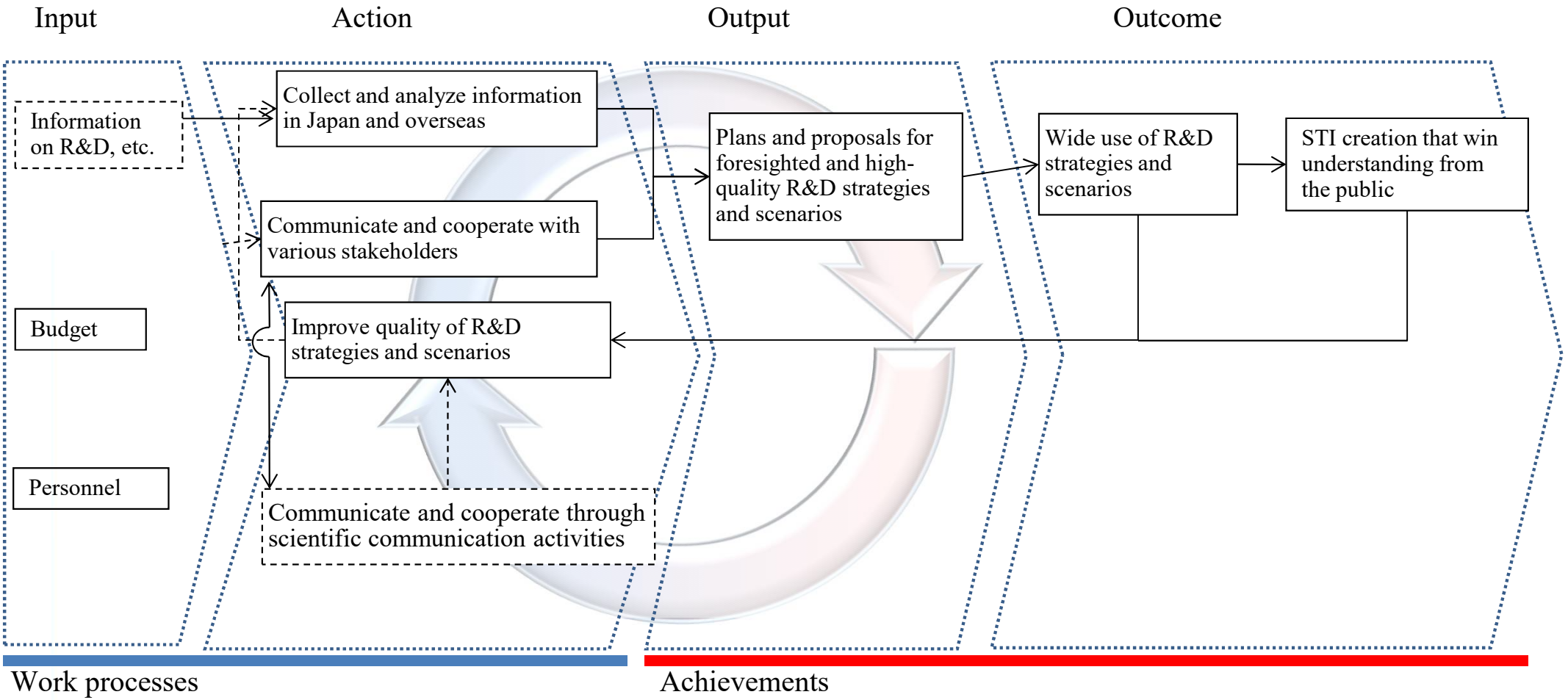
December 13, 2016

Association between Pillars and Programs

Pillar	Program
1. Plans and proposals for R&D strategies to co-create the future	
1.1. Making plans and proposals for R&D strategies with foresight	•R&D Strategy Center programs •China Research and Communication Center programs •Low-carbon society implementation social scenario programs
2. Creation of knowledge and conversion to economic and social values	
2.1. Promoting R&D for future industrial development and social transformation	•Future society creation programs (ACCEL, ALCA, A-STEP I, newly selected topics in advanced measurement technology will be restructured and consolidated into a new program) •Strategic basic research programs (CREST, ERATO, Sakigake, part of ALCA & ACCEL already selected, RISTEX) •Industry-academia collaborative R&D programs (part of A-STEP I already selected, value programs, part of advanced measurement technology already selected)
2.2 Establishing a systemic virtuous cycle of personnel, knowledge and capital	<Support for providing "places" of co-creation> •Industry-academia collaborative R&D programs (COI, Research Complex Program, OPERA) •Innovation Hub Program <Support and investment for industrialization and startup companies> •Industry-academia collaborative R&D programs (A-STEP II, III) •Industry-academia collaborative commercialization programs (NexTEP) •Industry-academia collaborative R&D programs (START) •Support Program of Capital Contribution to Early-Stage Companies (SUCCESS) <Support for use of intellectual properties> •Promotion of the Use of Intellectual Property
2.3. Promoting international collaborative R&D, international exchange and science and technology diplomacy for increasing collaboration of humans and organizations beyond boundaries	•International collaborative research programs •International collaborative program (including accommodation for foreigners) •Japan-Asia Youth Exchange Program in Science
2.4. Improving information platforms	•Science and technology information cooperation and distribution promotion programs •Science and technology document information delivery services •Life science Database Integrated Project
2.5. Promoting innovative new technology R&D	•ImPACT
3. Promotion of future co-creation and development of human resources	
3.1 Deepening communication and cooperation with society for future co-creation	•Science and technology communication promotion programs
3.2 Focusing on the education of next-generation innovation personnel for creating the future	•Next-generation human resource development programs
3.3 Fostering human resources contributing to creating innovation	•Research personnel information utilization support programs •Advanced Program for Program Manager's Candidate Hub •Research Integrity Promotion programs

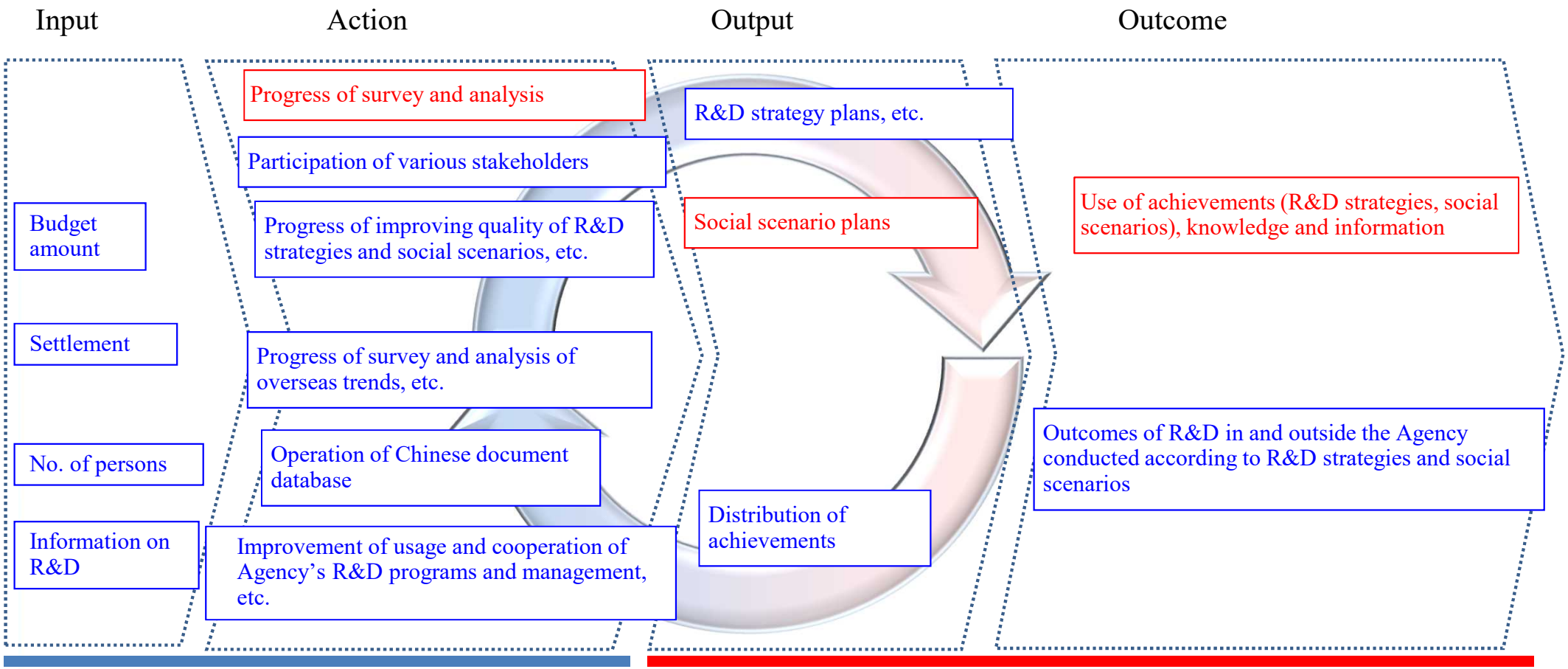
1. Plans and proposals for R&D strategies to co-create the future

Objectives: In the era of drastic changes, the Agency shall make plans and suggestions for R&D strategies with foresight by taking into account trends in Japan and overseas, and identifying the expectancy to science and social issues to be resolved through communication and cooperation with society and analysis of objective data to maintain and improve the competitive strength of Japan in future years through the promotion of science and technology, and contribute to sustainable development of the international community, even though the future is uneasy and foggy.



1.1. Making plans and proposals for R&D strategies with foresight (evaluation axis and index)

Objectives: The Agency shall establish a human network to collect latest and useful information, and based on the survey and analysis of science and technology policies and trends of R&D in Japan and overseas, make suggestions for foresighted, high-quality R&D strategies that Japan should take on. It shall also estimate the realization of a future low-carbon society with sustainable development in 2050, and make suggestions for high-quality social scenarios and strategies that will lead us to achieve it.



Work processes

Evaluation axis: Are processes for making plans for R&D strategies and social scenarios appropriate?

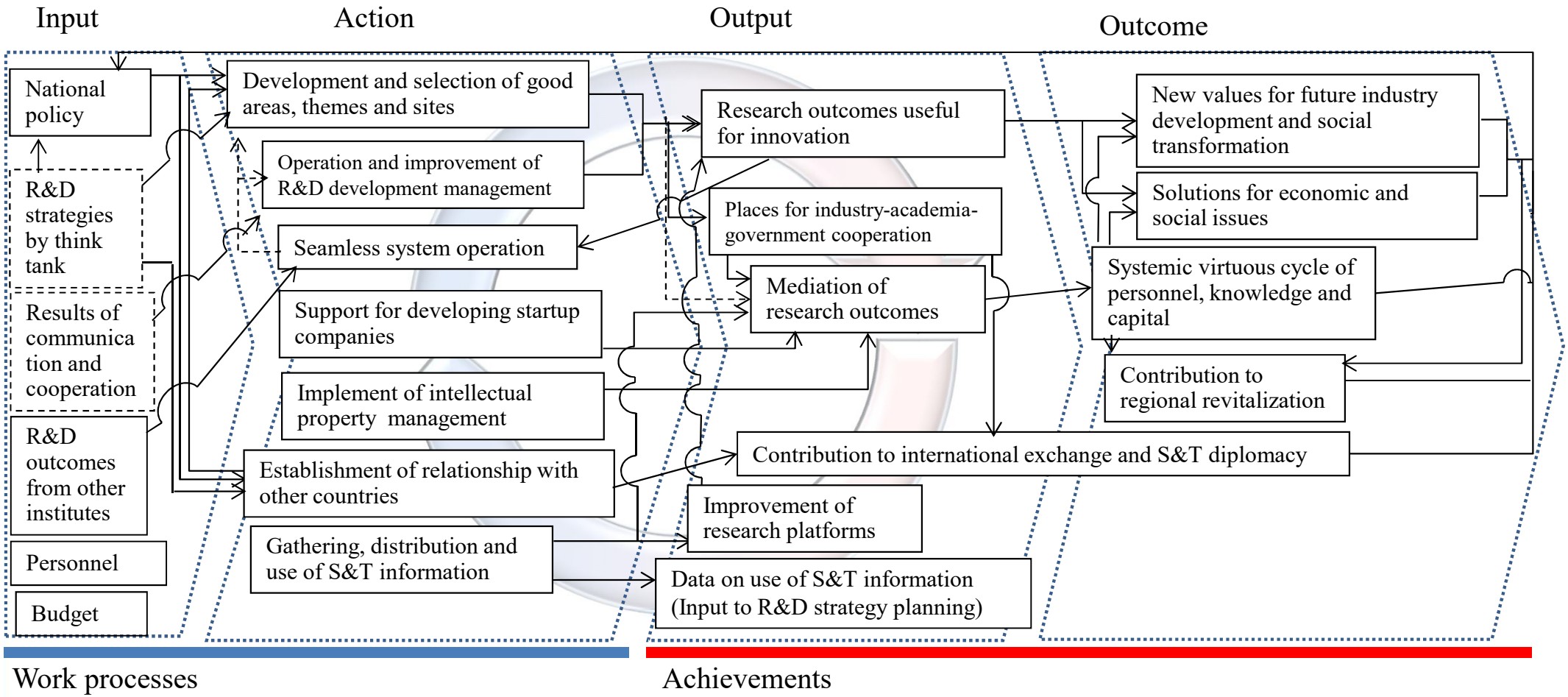
Achievements

Evaluation axis: Are foresighted, high-quality R&D strategies and social scenarios planned and applied to develop policies, measures and R&D?

Blue: Monitoring index Red: Evaluation index

2. Creation of knowledge and conversion to economic and social values

Objectives: Create new values in preparation for the future industrial structuring and social transformation, and respond to economic and social issues by making use of the Agency's characteristics as the network type institute which is adaptive to the changing world, and proactively promoting original and challenging R&D which may lead to innovation.



2. Creation of knowledge and conversion to economic and social values (evaluation axes, evaluation indexes)

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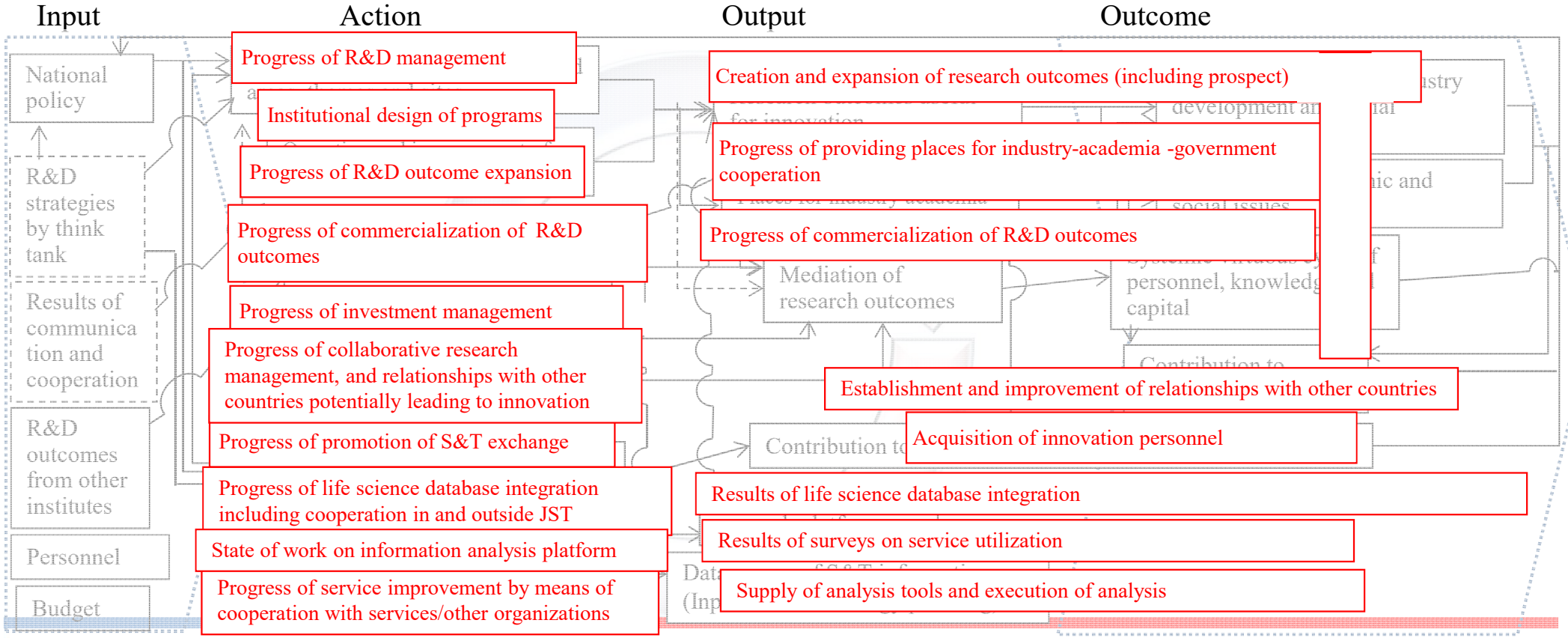


Work processes

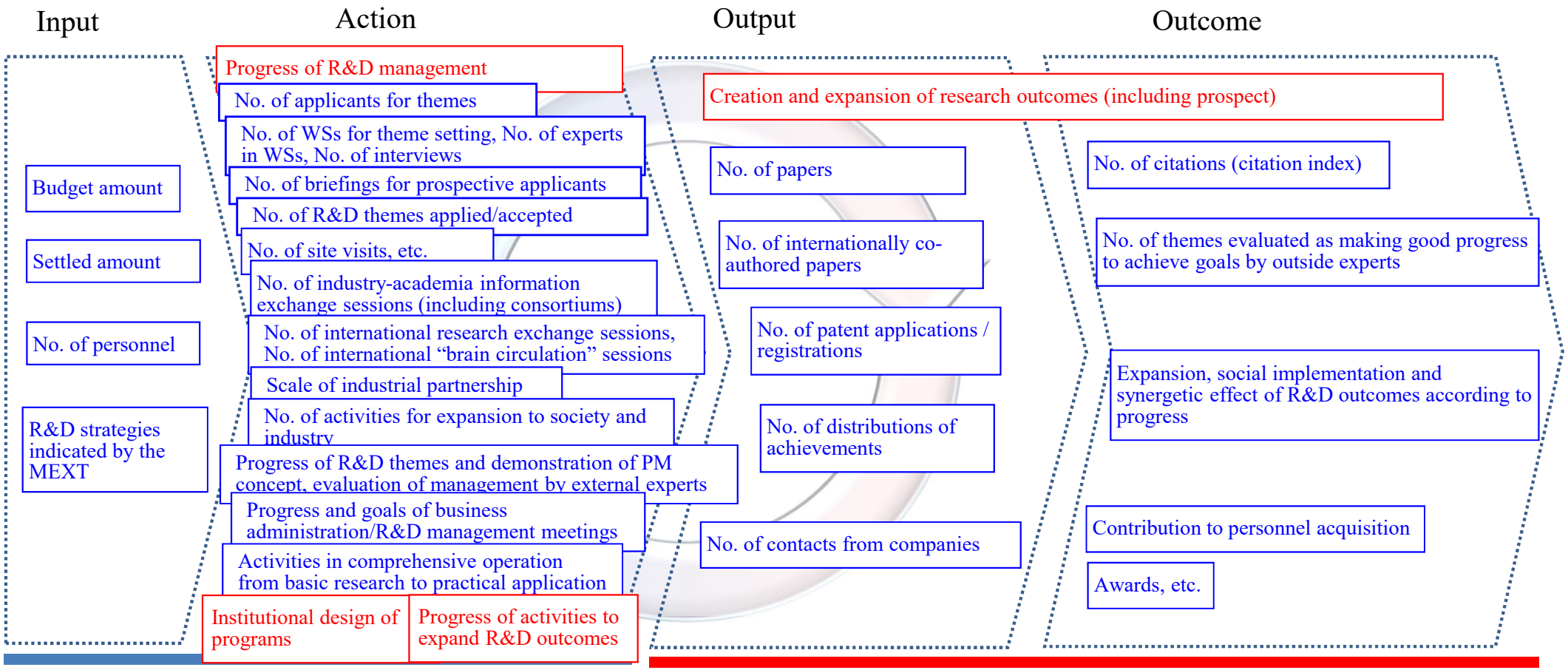
Evaluation axis ①: Is the management of original and challenging R&D leading to innovation appropriate?
Evaluation axis ②: Are good themes selected under the appropriate R&D management?
Evaluation axis ③: Does the promotion (e.g., investment, support for startups and intellectual property) of practical application of R&D outcomes work properly?
Evaluation axis ④: Does international collaborative R&D management contribute to the following?
- Solving global issues, - Improving levels of science and technology in Japan and partners
Evaluation axis ⑤: Is the promotion of science and technology exchange appropriate?
Evaluation axis ⑥: Do R&D outcomes contribute to solving global issues, improving levels of science and technology in Japan and partners, and strengthening science and technology diplomacy?
Evaluation axis ⑦: Was information improved or was high-value added in response to user needs?
Evaluation axis ⑧: Is database integration for promoting life science R&D appropriate?

Achievements

Evaluation axis ①: Do outcomes contribute to creating new value and solving social issues for future industry development and social transformation?
Evaluation axis ②: Were places for industry-academia-government cooperation provided?
Evaluation axis ③: Were R&D outcomes turned to practical application and returned to society (investment, support for startups and intellectual property, etc.)?
Evaluation axis ④: Do R&D outcomes contribute to solving global issues, improving levels of science and technology in Japan and partners, and strengthening science and technology diplomacy?
Evaluation axis ⑤: Is the promotion of science and technology exchange for acquiring S&T personnel appropriate?
Evaluation axis ⑥: Was distribution of science and technology information put in place and promoted for contributing to creating STI?
Evaluation axis ⑦: Does the integration of life science databases for boosting life science R&D contribute to developing and improving R&D environment for effective and efficient R&D?

2.1 Promoting R&D for future industrial development and social transformation (evaluation axes, evaluation indexes)

Objectives: While the industry, academia and government need to share future visions and issues to promote R&D, the conventional system of operation segmented by fractional R&D program must be completely reorganized during the mid to long-term objectives period according to the overall strategy of the MEXT to build a consistent, practical management system including every aspect of R&D operations from basic research to support for practical application and creation of intellectual property under the supervision of program managers.



Work processes

Evaluation axis ①: Is the management of original and challenging R&D leading to innovation appropriate?

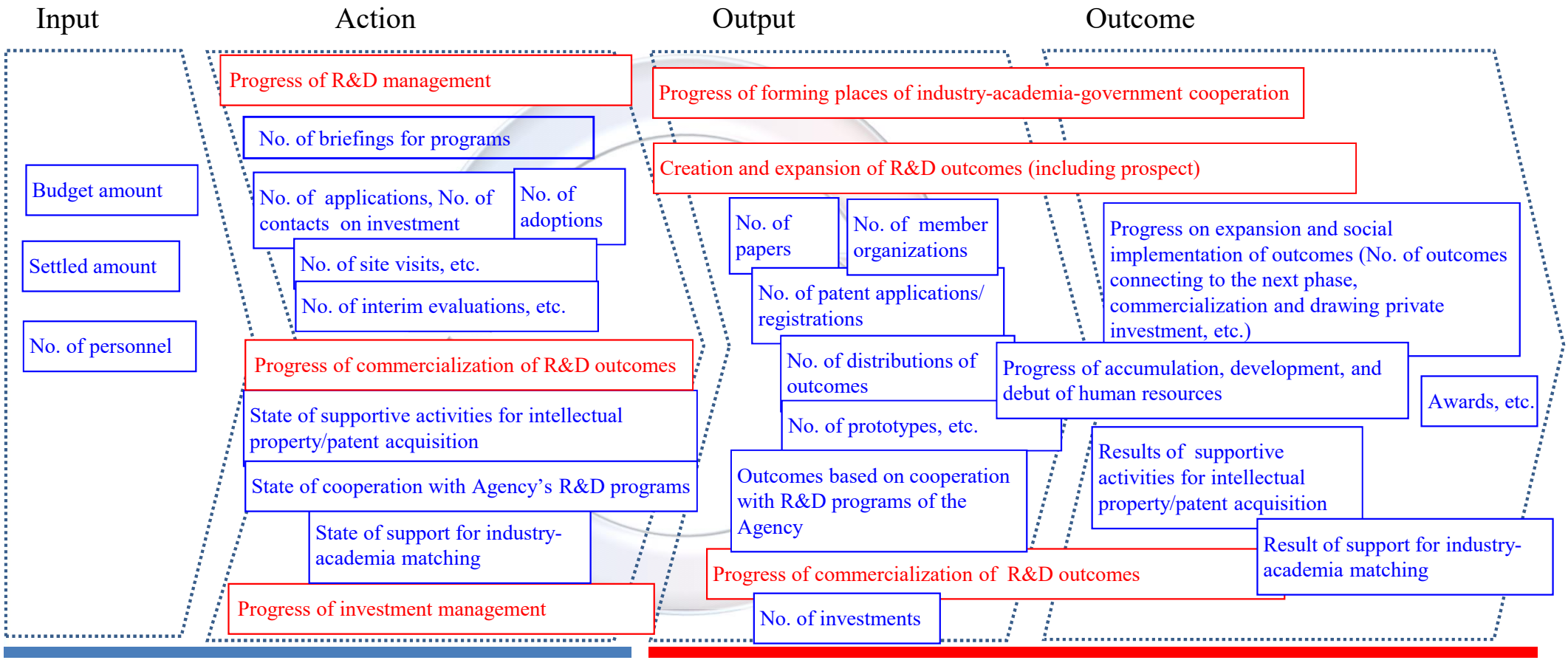
Achievements

Evaluation axis ①: Were outcomes contributed to the creation of new value and solution to economic and social issues produced for future industrial development and social transformation?

Blue: Monitoring index Red: Evaluation index

2.2 Establishing a systemic virtuous cycle of personnel, knowledge and capital (evaluation axes, evaluation indexes)

Objectives: Provide places mainly for use by universities and public research institutes in support of universities and public institutes to improve their management of industry-academia-government cooperation by focusing efforts on system innovation to improve full-scale industry-academia-government cooperation on the organization versus organization basis, and at the same time, accumulate private funds by supporting and investing in industrialization and startup companies as well as use of intellectual property.



Work processes

Evaluation axis ①: Are good themes selected under the appropriate R&D management?
Evaluation axis ②: Does the promotion (e.g., investment, support for startups and intellectual property) of practical application of R&D outcomes work properly?

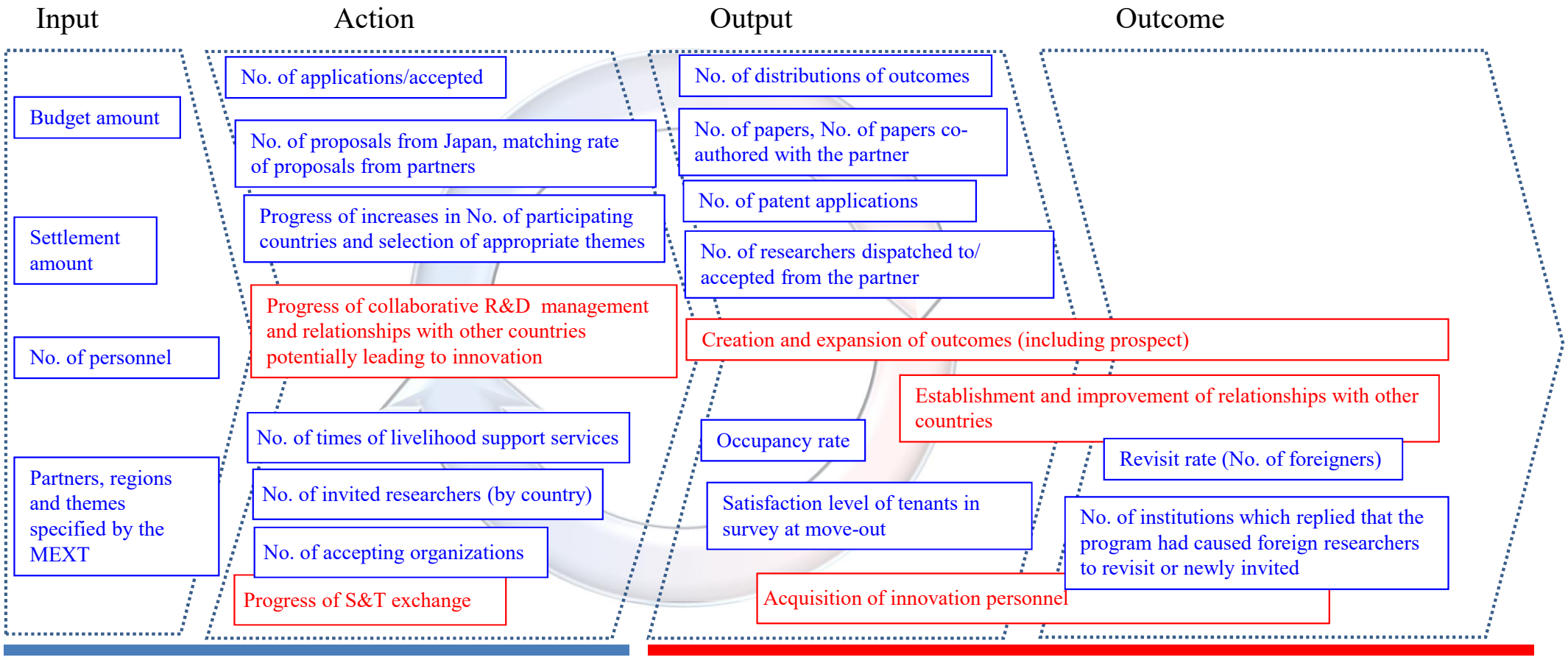
Achievements

Evaluation axis ①: Were places for industry-academia-government cooperation provided?
Evaluation axis ②: Were outcomes contributed to the creation of new value and solution to economic and social issues produced for future industrial development and social transformation?
Evaluation axis ③: Were R&D outcomes turned to practical application and returned to society (investment, support for startups and intellectual property, etc.)?

Blue: Monitoring index Red: Evaluation index

2.3 Promoting international collaborative R&D, international exchange and science and technology diplomacy leading to collaboration of personnel and organizations beyond boundaries (evaluation axis , evaluation index)

Objectives: Promote collaborative R&D and exchange with other nations according to the MEXT policies to create STI in Japan by dealing with issues common to the world such as solving global issues and setting sustainable development goals (SDGs). At the same time, promote S&T diplomacy in Japan.



Work processes

Evaluation axis ①: Does international collaborative R&D management contribute to the following?
- Solving global issues
- Improving levels of science and technology in Japan and partners

Evaluation axis ②: Is the promotion of S&T exchange appropriate?

Achievements

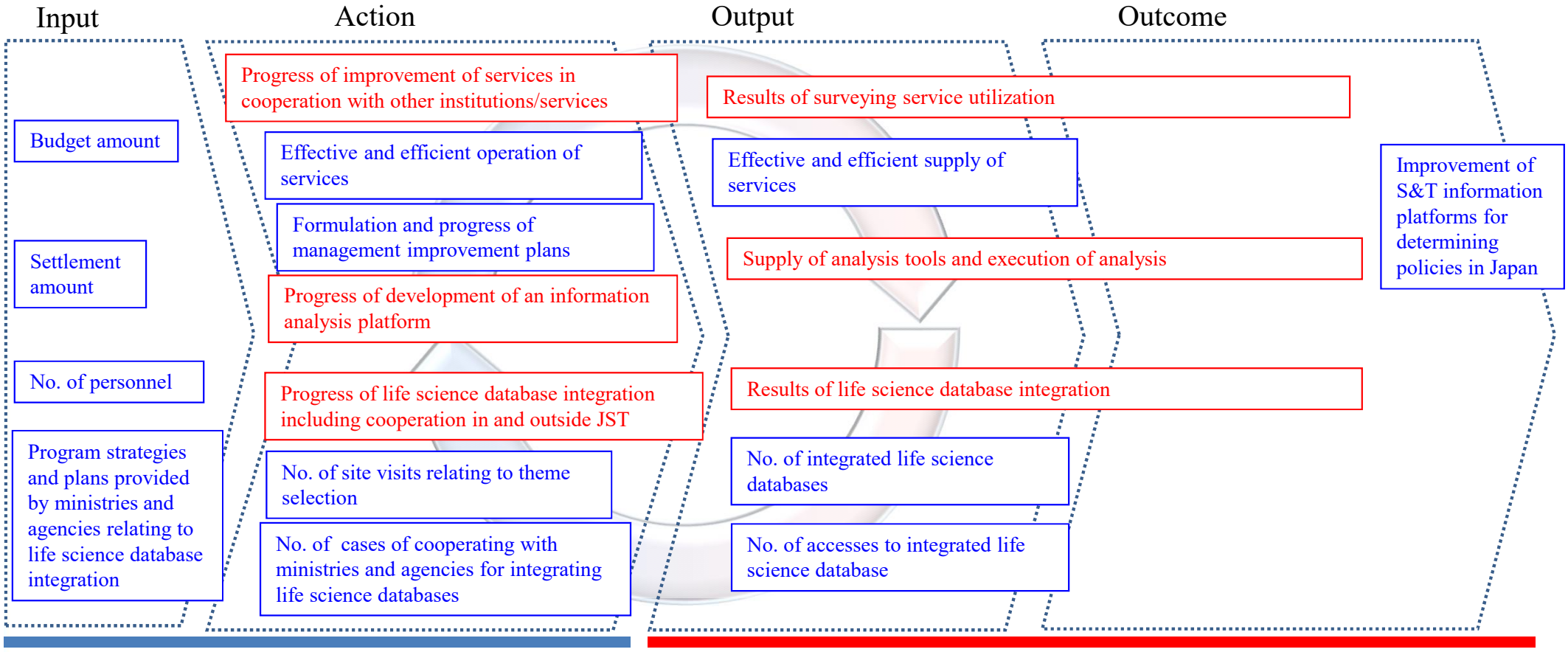
Evaluation axis ①: Do R&D outcomes contribute to solving global issues, improving levels of S&T in Japan and partners, and strengthening science and technology diplomacy?

Evaluation axis ②: Is the promotion of science and technology exchange for acquiring S&T personnel appropriate?

Blue: Monitoring index Red: Evaluation index

2.4 Improving information platforms (evaluation axes and indexes)

Objectives: To promote S&T information flow, establish an environment which makes S&T information and R&D outcomes (papers, research data) available for the required users in an effective way, and distributes R&D outcomes from academic societies in Japan to various parts of the country and overseas as a S&T information platform that supports R&D activities in Japan, while taking into account the international trend of open science. Integrate life science databases created by various research institutes under the MEXT policies, by planning strategies reflecting the trend of open science, expanding and operating the portal site and promoting R&D.



Work processes

Evaluation axis ①: Could new technology be used or developed for effective and efficient information collection, distribution and utilization?
Evaluation axis ②: Was information improved or was high-value added in response to user needs?
Evaluation axis ③: Is database integration for promoting life science R&D appropriate?

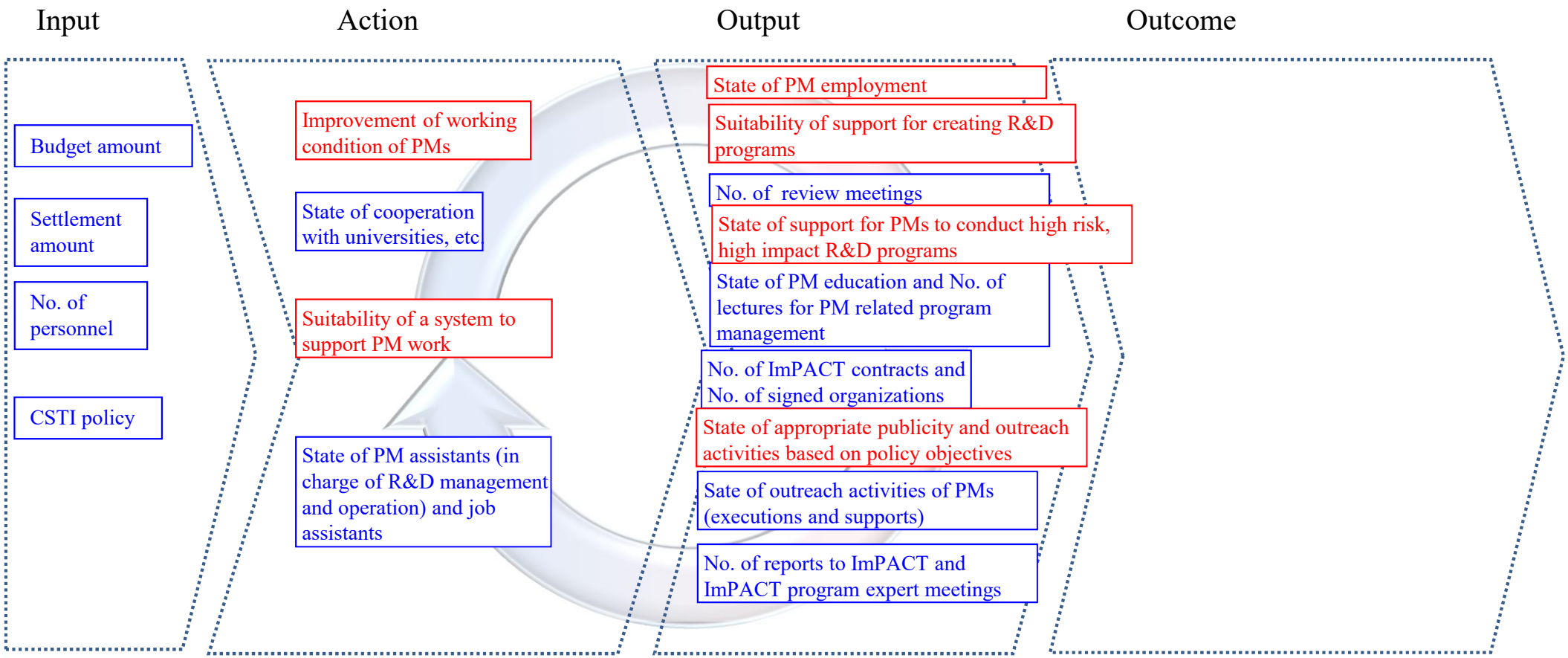
Achievements

Evaluation axis ①: Was distribution of R&T information put in place and promoted for contributing to creating STI?
Evaluation axis ②: Does the integration of life science databases for boosting life science R&D contribute to developing and improving R&D environment for effective and efficient R&D?

Blue: Monitoring index Red: Evaluation index

2.5. Promoting innovative new technology R&D (evaluation axes and indexes)

Objectives: Set up a fund based on the government-subsidized allowances to create innovative new technologies which are the basis for the progress of economy and society in Japan by pursuing R&D for producing these technologies under the policies determined by the Council for Science, Technology and Innovation (CSTI), aiming at creating STI which will, if realized, revolutionize the industry and society.



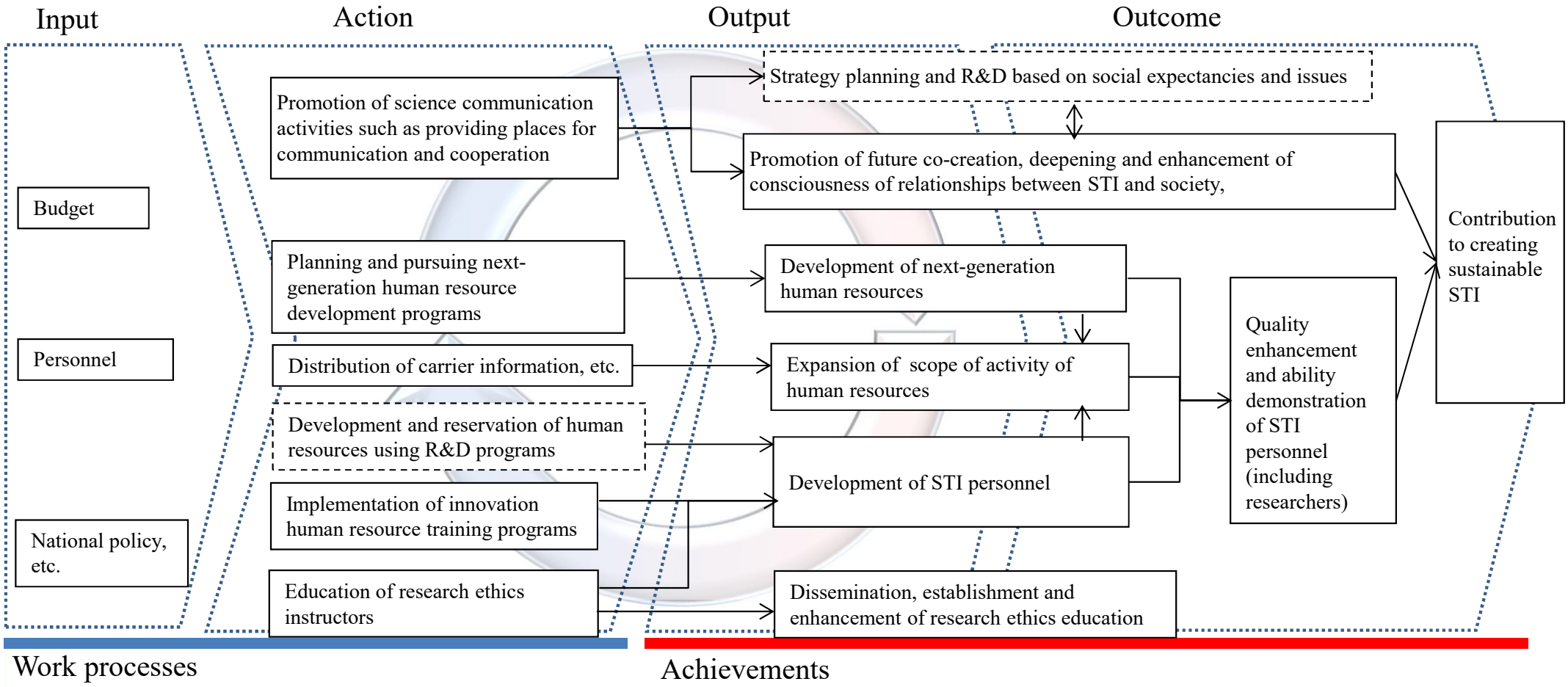
Evaluation axis: Is PM management support system appropriate for promoting R&D?

Evaluation axis: Is PM management properly supported for promoting R&D?

Blue: Monitoring index Red: Evaluation index

3. Promotion of future co-creation and development of human resources

Objectives: Promote bidirectional communication and cooperation with a variety of stakeholders in Japan and overseas aiming at future co-creation, and use the results of communication and cooperation in planning R&D strategies, making suggestions and promoting R&D. Also develop a variety of human resources expected to boldly challenge the development of next-generation personnel and creation of STI, all of which must contribute to creating sustainable STI.



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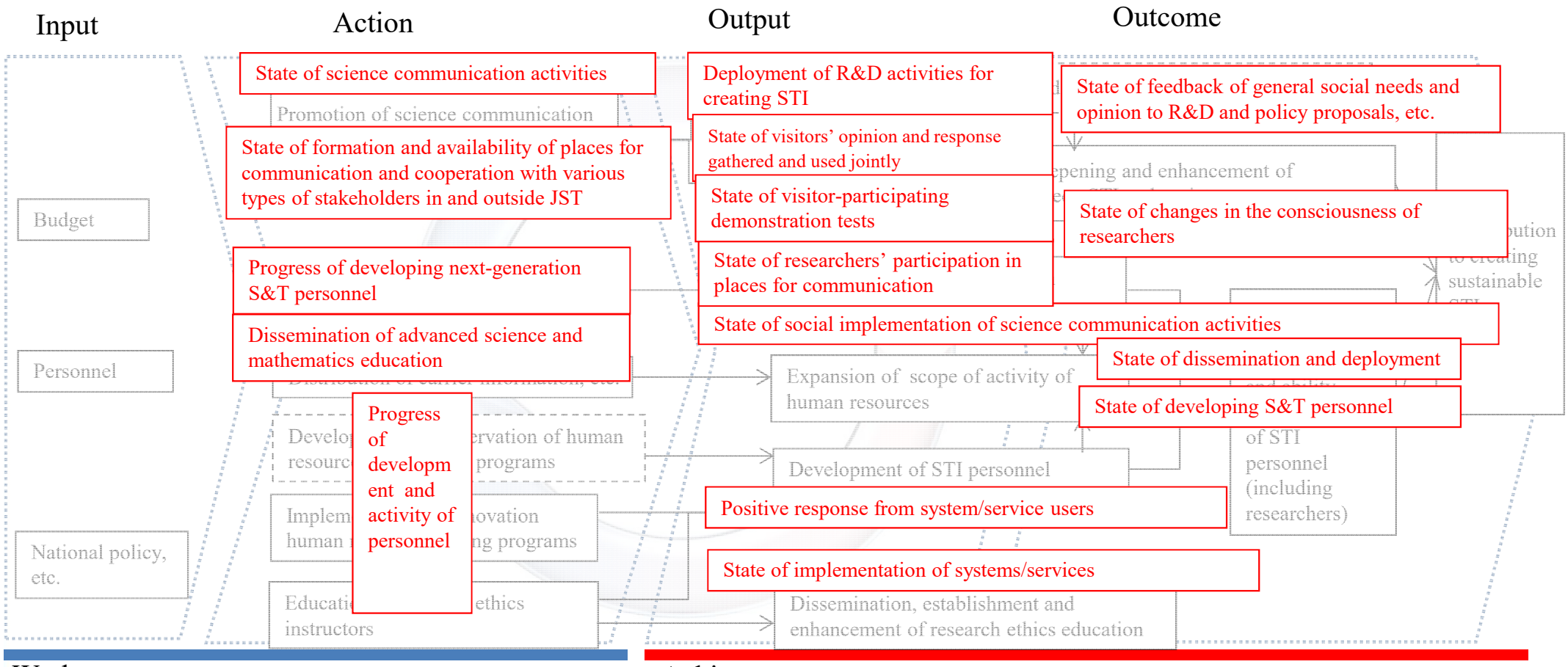


Work processes

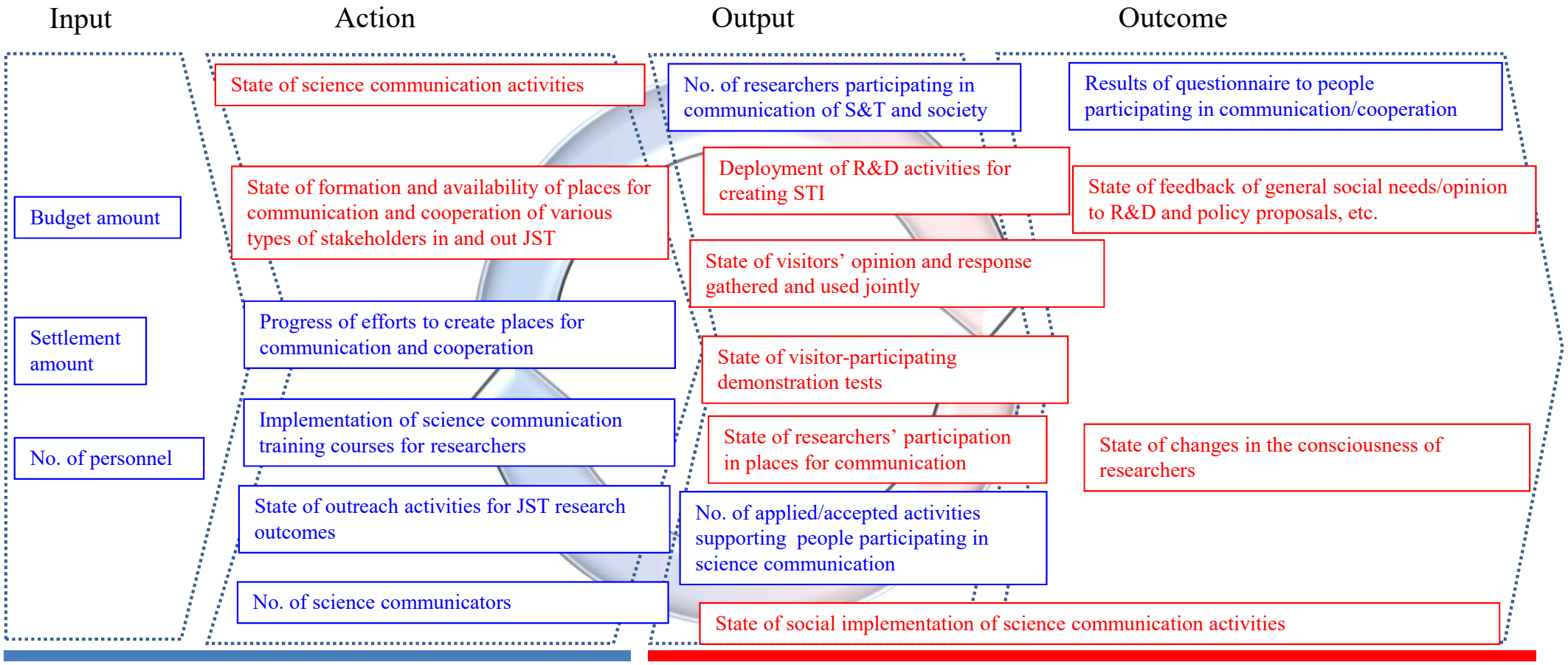
Evaluation axis ①: Is science communication appropriate for connecting science and technology with general society?
Evaluation axis ②: Are efforts to develop next-generation S&T personnel appropriate?
Evaluation axis ③: Is construction of a system for continuously developing science and technology personnel taken into consideration
Evaluation axis ④: Is support for relevant institutions appropriate?
Evaluation axis ⑤: State of personnel development and activity

Achievements

Evaluation axis ①: Are relationships between S&T and society deepened through bidirectional communication and cooperation of various types of stakeholders?
Evaluation axis ②: Are links to R&D strategy planning activities effective?
Evaluation axis ③: Is next-generation S&T personnel developed continuously and systematically?
Evaluation axis ④: Was a system to develop STI personnel and distribute them to appropriate places established to expand activities of human resources for particular purposes?

3.1 Deepening communication and cooperation with society for future co-creation (evaluation axes and indexes)

Objectives: Promote S&T communication including risk communication for providing places for bidirectional communication and cooperation of a variety of stakeholders and improving science and technology literacy of the public as well as social literacy of researchers. Reflect social expectancies and issues obtained from communication and cooperation in plans and proposals for R&D strategies and R&D projects to deepen relationships between STI and society.



Work processes

Evaluation axis : Is science communication appropriate for connecting science and technology with general society?

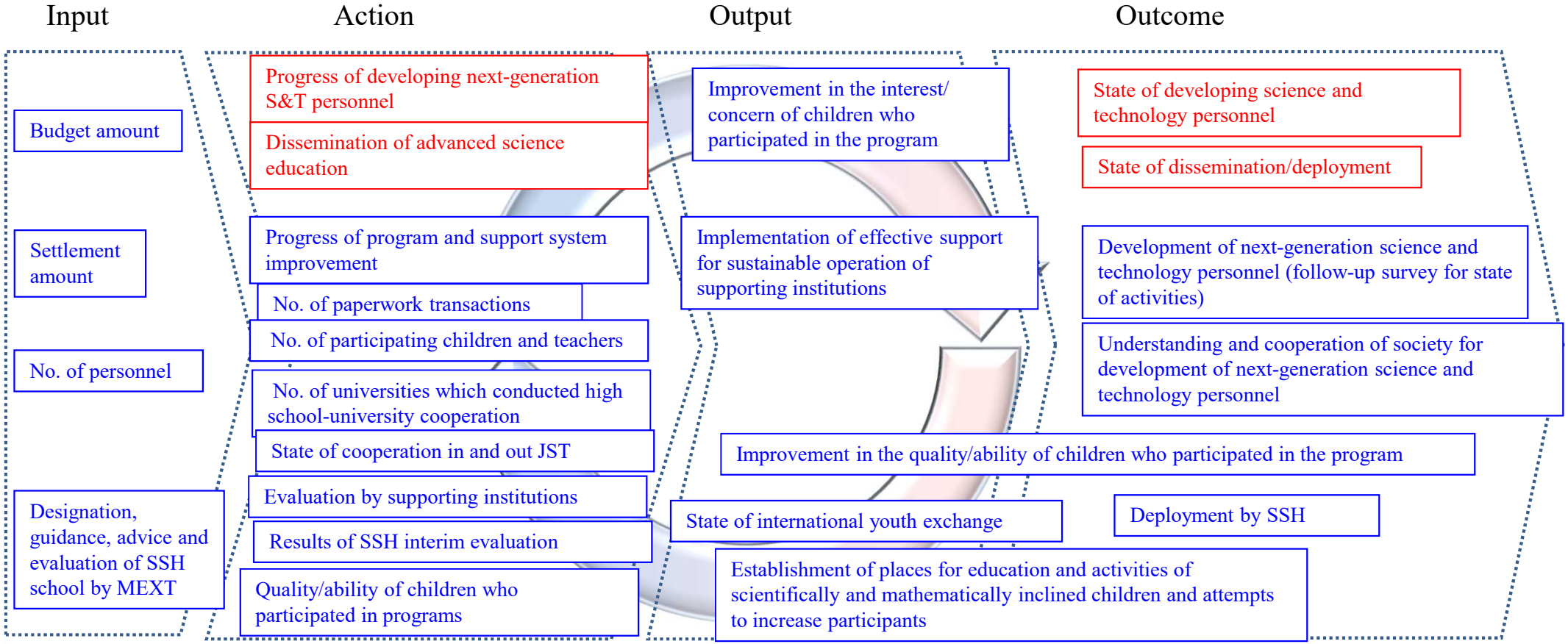
Achievements

Evaluation axis ①: Are relationships between S&T and society deepened through bidirectional communication and cooperation of various types of stakeholders?
Evaluation axis ②: Are links to R&D strategy planning activities effective?

Blue: Monitoring index Red: Evaluation index

3.2 Focusing on the education of next-generation innovation personnel for creating the future (evaluation axes and indexes)

Objectives: Provide higher education for the children having excellent qualities and abilities in science and mathematics and increase their interest, concern and desire to learn more on science, technology and mathematics as well as their understanding of what they learnt to foster human resources who are bearers of next-generation science and technology. Develop human resources with broader prospect in light of the current tendencies of deepening relationships between STI and society.



Work processes

Evaluation axis ①: Are efforts to develop next-generation science and technology personnel appropriate?
Evaluation axis ②: Is construction of a system for continuously developing science and technology personnel taken into consideration?
Evaluation axis ③: Is support for relevant institutions appropriate?

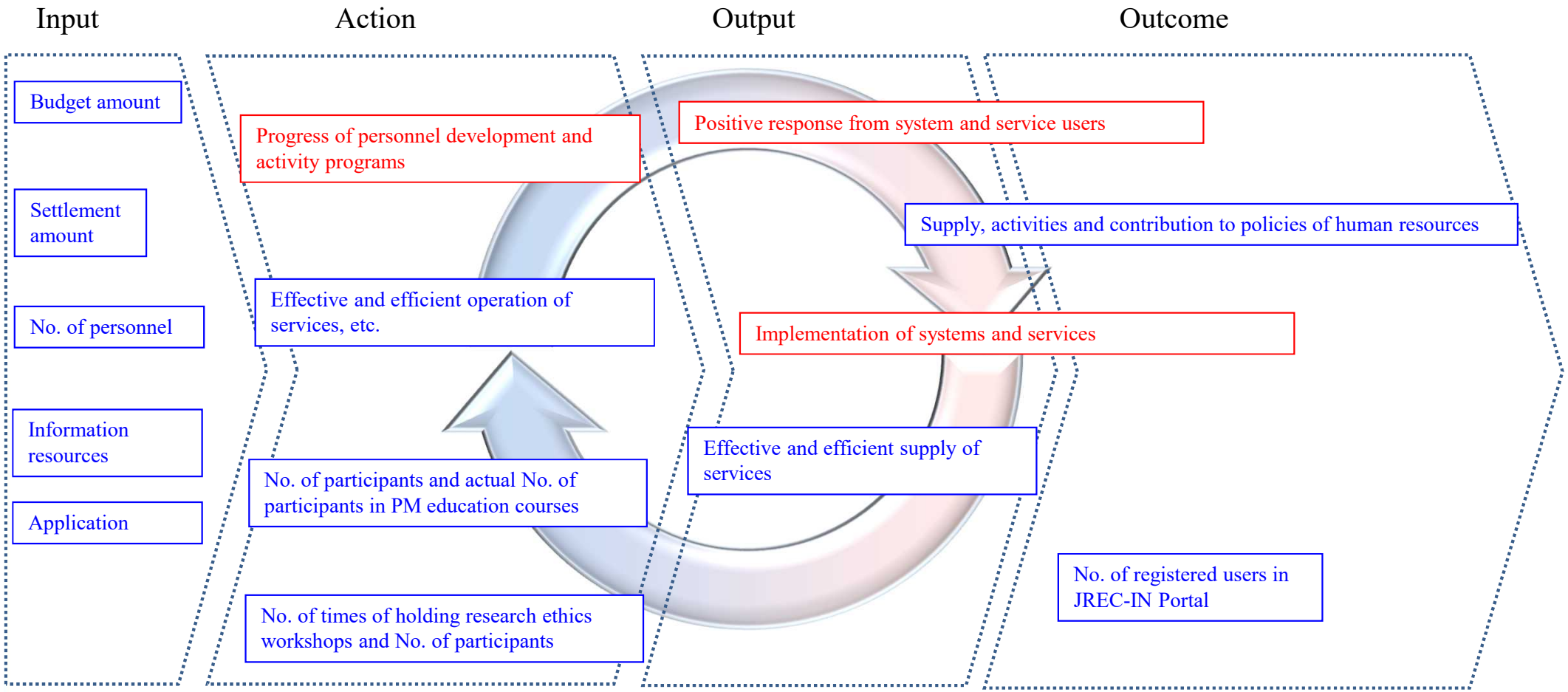
Achievements

Evaluation axis ①: Is next-generation science and technology personnel developed continuously and systematically?
Evaluation axis ①: Are activities of supporting institutions effective for sustainable operation?

Blue: Monitoring index Red: Evaluation index

3.3 Fostering human resources contributing to creating innovation (evaluation axes and indexes)

Objectives: Supply information useful for carrier and ability development to support high-level human resources active in various fields. Develop program managers (PMs) by establishing their carrier path through the effective operation of practical development programs. Disseminate, implement and upgrade research ethics education in cooperation with the MEXT and other public research funding bodies to promote fair research activities in research institutes.



Work processes

Evaluation axis : State of personnel development and activity

Achievements

Evaluation axis : Was a system to develop STI personnel and distribute them to appropriate places established to expand activities of human resources for particular purposes?

Blue: Monitoring index Red: Evaluation index