Kagoshima University 2050

Harnessing Diversity for the Next 100 Years

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1. The World and Japan in 2050

Japan, a country with limited flat land and natural resources where more than 100 million people live within a narrow territory, became the first non-Western nation to modernize and achieved growth and development through the diligence of its people. Although the process of modernization also had negative aspects, including war and pollution, in recent years Japan has safeguarded its national existence on the foundation of relationships of trust with other countries. Despite being unable to achieve self-sufficiency in food and energy and relying heavily on overseas supplies, Japan has been able to sustain itself because of the free-trade system consistently upheld since the end of World War II and because its people have connected the world through trust, making Japan indispensable to the international community. What will the foundations that have brought stability and growth to Japan look like in 2050?

In 2026, states willing to alter the status quo through force are on the rise, and the world is divided and in conflict under hegemonic powers. Some countries are controlled by extremist forces, with their people living amid hunger and despair. In the economic sphere, too, the international economic order—based on the Bretton Woods system and the liberalization of current account transactions under the IMF, together with the free-trade system under GATT/WTO, which had remained in place throughout the postwar era—is rapidly eroding.

Food security has also become a major challenge. Compounded risks—including the COVID-19 pandemic, soaring energy prices, climate change, and conflicts—had already begun to reveal their effects on agricultural and food systems through supply-chain disruptions and interruptions. The situation then deteriorated rapidly on a global scale, in part because of international conflicts. At the same time, the world faces challenges in building sustainable and resilient agricultural and food systems, including land use for food production, agricultural production adapted to climate change, and the efficient use of fertilizers.

Moreover, the clearing and development of forests worldwide, climate change, and other factors have increased the risk of infectious diseases transmitted by animals and other vectors. The advance of globalization has also led to situations in which various emerging and re-emerging infectious diseases, including zoonoses, spread across

national borders throughout the international community, making internationally coordinated action essential. How will these circumstances have changed 25 years from now? Will we have succeeded in creating a better world?

We must create peace and stability in the international community, and the growth they support, through our own efforts. The future of international affairs will depend on what we do from this point onward. Yet one fact is clear when considering Japan in 2050: the country's population, which began declining after peaking at 128.1 million in 2008, is projected to fall below 100 million by 2050, ushering in an unprecedented society marked by a declining birthrate and an aging population, with the proportion of people aged 65 and over approaching 40%. Under these circumstances, foreign residents, who currently account for just under 3% of the total population, are expected to exceed 10% as early as 2050. At the same time, advances in digitalization, including AI, are expected to transform the industrial structure.

Universities are expected to become even more important as institutions that support these transformations. In such circumstances, what kind of institution should Kagoshima University aspire to be?

2. Kagoshima University's Aspirations for 2050

Shimadzu Shigehide, the eighth lord of the Satsuma Domain, was known for his enterprising spirit, love of learning, and enlightened policies. In 1773, he founded the Zoshikan domain school. His great-grandson, Shimadzu Nariakira, the eleventh lord of the domain, reformed the Zoshikan curriculum to place greater emphasis on developing human resources. He also appointed talented individuals, invested in the modernization of the Satsuma Domain and, ultimately, Japan, and advanced the Shuseikan Project. Kagoshima University, whose origins can be traced to Zoshikan, is expected to develop into an institution that will lead Kagoshima Prefecture and Japan in 2050.

According to the Population Projections for Japan published in April 2023 by the National Institute of Population and Social Security Research, Japan's population is projected to be 63 million in 2100, roughly half the current population of 124 million. The working-age population that supports society is also expected to decline by half, from the current 74 million to the 50-million range in 2050 and the

30-million range in 2100. Against this backdrop, the Population Strategy Council, a private-sector panel of experts, published Population Vision 2100. Looking toward society in 2100, it identified the challenges that must be addressed through two strategies: a "stabilization strategy," aimed at slowing population decline and stabilizing the population, and a "resilience strategy," aimed at strengthening society qualitatively and building a diverse, growth-oriented society even with a smaller population than today. It calls for action by the national government, local governments, and the public.

Why should we consider society in 2100 when envisioning the university of 2050? Because the working-age population that will support society in 2100 will begin entering society in the 2050s. In particular, when considering the social role of universities as providers of highly skilled professionals who support society, the vision of the university in 2050 overlaps with the form of human-resource development needed to sustain the society leading toward 2100. Universities can do only so much with respect to the stabilization strategy aimed at mitigating population decline. However, with regard to the resilience strategy for building a diverse society with strong growth potential, universities must play a proactive role through education, research, and healthcare. For Kagoshima University in particular—located in a region at the forefront of these challenges, with many inhabited remote islands and significant effects of population decline and a super-aged society on daily life—presenting solutions to these issues can serve not only as a model for Japan as a whole, but also as a form of international contribution to countries and regions facing similar challenges.

It is also projected that foreign residents will account for approximately 10% of Japan's population in 2050. A borderless society, in which distinctions between domestic and international spheres are blurred in every aspect of daily life, will have arrived. How to shape a society in which Japanese and foreign residents live together is one of the issues that universities should take the lead in addressing. In response to these circumstances, what should Kagoshima University aspire to become by 2050 in order to help build a better society?

In August 2025, an expert committee of the Ministry of Education, Culture, Sports, Science and Technology organized the key issues for strengthening the functions of national university corporations and presented a "Direction for Reform." In November of the same year, the Basic Policy for Reform of National University Corporations and Related Institutions was formulated on

that basis. The policy requires each university to consider and put into practice the social role it should fulfill as a national university. Accordingly, Kagoshima University will make it a central pillar of its social role to support and further develop distinctive, outstanding research; cultivate highly skilled professionals responsive to changing social needs and leaders of local communities; and serve as a university that helps resolve regional challenges. We are convinced that this will meet society's expectations of a university rooted in its region. To this end, Kagoshima University in 2050 must possess the foresight and sustainability needed to continue supplying the right people in the fields required for society toward 2100. The scale of the University and the composition of its faculties and graduate schools must also be adapted by accurately forecasting and anticipating human-resource demand. Educational content must be reviewed continuously so that the University can develop people indispensable to Japan's future growth and stability. While meeting local educational needs, we will move beyond the prefecture-based university structure established under the new university system in 1949 and pursue collaboration and integration with universities and related institutions across prefectural boundaries in a wide range of fields from the perspective of effective human-resource development.

In research as well, universities must play a proactive role in building a diverse society with strong growth potential. This requires not only research that leads the world, but also socially implementable research that guides local communities toward solutions to their challenges. From the perspective of maintaining and improving public services, the future form of healthcare services is another major theme. Kagoshima University is both an education and research institution and the operator of a university hospital that serves as a healthcare institution, and we believe this structure will remain unchanged in 2050.

In particular, as noted in the Seventh Science, Technology and Innovation Basic Plan, AI for Science—the integration of AI into scientific research—is rapidly and fundamentally transforming the nature of scientific research in terms of creativity, efficiency, and other dimensions. We will make the necessary investments so that this trend can strengthen the University's research capabilities.

How Japan can build a society in which Japanese and foreign residents can live together when foreign residents account for 10% of the population is a critical question. Equally important is how universities respond to internationalization so that peace and stability can be achieved in the

international community and Japan can continue to earn global trust as a country the world needs. The sections below consider the future of education, research, healthcare, community engagement, and internationalization, as well as the university management that will support them, in order to realize this vision of the University.

3. What Will Shape Kagoshima University in 2050?

3-1. The Future of Education

Kagoshima University aims to provide education that evolves with the times, serving as a place where all students can realize their dreams and goals. Society in 2050 is expected to face many difficult challenges, including population decline and aging, climate change, disaster response, and the sustainability of healthcare and public services. We believe that the value of a university education lies precisely in developing the capacity to overcome these challenges and contribute to society in one's own way.

To this end, the University will place interdisciplinary and integrative learning at the core of its education, unconstrained by conventional divisions such as the humanities and sciences. By combining diverse bodies of specialized knowledge and perspectives from different fields and examining real-world issues from multiple angles, students will be able to develop the capacity to generate ideas and solutions of their own. Education responsive to advances in AI and data science will enable them to cultivate the capabilities needed to realize their dreams while attending not only to technology, but also to society and ethics.

To realize this form of education, the University will place importance on improving educational quality and sustainability and will strengthen the connection between university management and education. We will clearly position distinctive research, contributions to local communities, and the development of highly skilled professionals as core missions of the University, and aim to establish a forward-looking educational system that is resilient to social change. By pursuing management that continually enhances educational quality, we will provide an environment in which students can learn with confidence and continue pursuing their dreams.

In this way, the University will continue to advance the quality of learning and the educational environment, working with local communities and the wider world so that all students can realize their dreams. The following four pillars set out the specific directions for achieving this vision.

1) Continuous Review of Educational Content and Advancement of Education Grounded in the Research Base

In response to changes in industrial structures brought about by the spread of generative AI and digital technologies, we will continuously review educational content, including the development of new degree programs. We will pursue advanced professional education underpinned by world-class research alongside socially engaged, implementation-oriented education that contributes to resolving regional challenges. At the same time, we will cultivate AI literacy as a practical capacity to apply AI to learning, research, problem-solving, and value creation, based on an understanding not only of information ethics and responsible conduct but also of AI's characteristics and limitations. In particular, we will use challenges specific to remote islands and rural areas—including maintaining and improving healthcare and public services in Kagoshima, depopulation and aging, and disaster response—as subjects of study. Through boundary-crossing, practice-based learning such as fieldwork that enables interaction with diverse people, students will understand the structure of these challenges and develop the ability to design and implement sustainable solutions. We will also strengthen the integration of research and education, foster research-oriented thinking from the undergraduate level, and connect undergraduate study to graduate education in order to continuously develop individuals who combine advanced expertise with transferable skills. In pursuing this human-resource development, it is essential that university faculty members enhance their own expertise and instructional capabilities. The University will establish support mechanisms that encourage faculty members to improve their mindsets and skills so that they can serve as role models for students.

2) Welcoming Diverse Learners and Strategically Restructuring the Scale of Education

As the birthrate declines rapidly, an educational system premised on conventional enrollment quotas will become difficult to sustain. Viewed differently, however, this also presents an opportunity for qualitative transformation in education. Through admissions processes that emphasize abilities such as thinking, judgment, expression, initiative, and collaboration, the University will welcome learners from diverse backgrounds. In particular, by expanding the admission of international students and enhancing the

educational environment, we will increase student diversity and make the campus itself a learning space for multicultural inclusion. We will also respond to the needs of working adults for recurrent education and reskilling, creating educational experiences that make renewed learning possible at every stage of life. Furthermore, by introducing integrated five-year education that connects bachelor's and master's programs organically, we will accelerate the development of highly skilled professionals. At the same time, we will promote the sharing of educational resources and division of functions through collaboration with other universities and related institutions, thereby building a broad-based educational network.

3) Interdisciplinary Education and the Development of Highly Skilled Professionals Leveraging the Strengths of a Comprehensive University

To address challenges relating to healthcare, welfare, and community-based care on remote islands and in rural areas, we will provide learning experiences in which students from medicine and health sciences work together with students from engineering, agriculture and fisheries, teacher education, the humanities and social sciences, and other fields. We will develop people capable of envisioning the social implementation of integrated community care and healthcare from multiple disciplinary perspectives, while fostering the creation of advanced models—such as telemedicine and digital public services—that turn geographical constraints into advantages.

4) Advancing Education Based on Globalization and Diversity

In recognition of advancing globalization and diversity, we will promote the admission of international students and faculty members in an integrated manner alongside opportunities for Japanese students to study abroad. We will expand courses taught in English and international collaborative education, while also emphasizing education that deepens understanding of Japanese and regional cultures. We will also create an environment in which diverse members—including women, working adults, and students with disabilities—can fully demonstrate their abilities, thereby realizing education that treats diversity itself as a source of knowledge creation.

The University will turn its location in a region at the forefront of societal challenges into a strength. As a university that demonstrates a vision for

society's future through education, it will continue to play an indispensable role in building a resilient society with strong growth potential while deepening broad-based and international collaboration.

3-2. The Future of Research

Against a backdrop of accelerating globalization, increasingly complex social challenges, rapid population decline, and a falling birthrate and aging population both in Japan and abroad, Kagoshima University urgently needs to promote the social implementation and international dissemination of research outcomes closely aligned with science, technology, and innovation policy, under the principle of "From the Region to the World." Over the next decade, with the realization of Society 5.0 and a well-being society, sustainable economic growth, and security as its goals, the University must embody a vision for a graduate-level education and research hub rooted in the communities of southern Kyushu and Kagoshima while remaining open to Asia and the world. We will vigorously advance the transformation into an open-science research university integrating AI and science.

1) Priority Areas

We will maximize the University's distinctive strengths by advancing research centered on global and regional food security and collaboration among agriculture, fisheries, and veterinary medicine. We will also use remote islands and rural areas as settings for demonstrating new models of local communities and, in accordance with the J-PEAKS philosophy, establish an ultra-interdisciplinary research system encompassing "Advanced Infection Control," "Food and Safety," "Island Environments and Biodiversity," and "Disaster Prevention and Mitigation." We will accelerate the concentration of research in the three domains of Global Health, Risk, and Ecology, aiming for industry-academia collaboration and social implementation that position the University as a leader in planetary health. At the same time, we will build mechanisms through which research outcomes circulate from the region to the world. We will also make use of the rich regional resources and culture surrounding the University — including the Amami Islands World Natural Heritage site and climatic zones ranging from temperate to subtropical — to strongly promote diverse research that contributes to regional revitalization and local communities.

2) Pillars of the University-Wide Research Strategy

Kagoshima University will advance the following pillars in an integrated manner.

① Strengthening International Competitiveness and a Global Perspective

We will promote international joint research, double-degree programs, joint doctoral programs, and the development of globally capable professionals. By actively expanding overseas placements and international experience for doctoral students and early-career researchers and hosting researchers from abroad, we aim to become a hub for international brain circulation. We will also focus on creating diverse international research environments.

② Cultivating the Capacity to Embrace Risk and an Entrepreneurial Mindset

We will make support for university startups and entrepreneurship education partly compulsory, establish a system that supports risk-taking research in which failure is tolerated, and utilize programs such as SBIR. We will incorporate industry-academia-government-community collaboration programs and corporate internships into doctoral programs, supporting the establishment of diverse career paths.

③ Deepening Scientific Thinking and Community Engagement

To resolve regional challenges, we will establish an open-innovation platform based on co-creation among industry, academia, government, and the community. We will enhance science-literacy education, promote accessible public communication of research outcomes through science communication, encourage public participation in research through citizen science, and strengthen two-way communication with government, businesses, and residents.

④ Developing Research Infrastructure and Reforming Systems

We will strengthen research infrastructure by developing core facilities and AI for Science environments and standardizing AI-driven research design. We will cultivate highly specialized professionals and research-DX personnel through URAs and UEAs, while upgrading information and data infrastructure. Research data management will comply with the FAIR principles—Findable, Accessible, Interoperable, and Reusable—and we will establish a data-distribution infrastructure linked to the institutional repository. We will practice open science consistently from issue identification through social implementation and international dissemination, while ensuring rigorous attention to ethical, legal and social implications (ELSI). We will also emphasize research in the

humanities and social sciences, with regional culture, regional policy, regional management, and island studies as key pillars, and promote the development of highly skilled professionals who address regional challenges. To respond to the cultural, policy, and management challenges of local communities, we will enrich interdisciplinary education and research.

3) Advancing Research That Leverages Regional and Geopolitical Characteristics

Using the Amami Campus as a demonstration field, we will strengthen problem-solving research that integrates island and rural healthcare, education, disaster prevention, and environmental challenges. We will deepen global risk and ecology research using the biodiversity, volcanoes, and marine resources of the Nansei Islands, while working to establish a regional innovation hub, solve regional challenges, and support the creation of locally generated startups.

4) International Joint Research and Brain Circulation

By establishing double-degree programs and joint doctoral programs with institutions in Asia, we will strengthen interdisciplinary clusters—Global Health, Risk, and Ecology—internationally. We will also promote international brain circulation and network building through initiatives such as J-RISE and NEXUS.

5) Strengthening Internal Systems

Through reform of the academic-field system, we will seamlessly integrate education, research, and social implementation, while advancing functional enhancement and management reform. We will improve doctoral-program enrollment and completion rates and increase faculty research time through research DX and work-style reform.

The University aims to make a leap forward as a world-class open-science research university. Driven by an “open circulation of knowledge,” it seeks to become a knowledge hub that sends knowledge and talent from southern Kyushu to Asia and the world while creating sustainable, high social value. Doctoral-level professionals will lead problem-solving in interdisciplinary, industry–academia–government–community, and international collaborative teams. The University will align its efforts with policy while ensuring

consistency with the indicator targets of the Science, Technology and Innovation Basic Plan and effective progress toward achieving them.

3-3. The Future of Healthcare

By 2050, the population of the Kagoshima healthcare region, where Kagoshima University Hospital is located, is projected to decline by 18.1%—approximately 120,000 people—from its 2020 level, while the number of older residents aged 65 and above will increase by approximately 20,000. Across Kagoshima Prefecture as a whole, however, the population is projected to decline by 26.3%—approximately 420,000 people—from its 2020 level, and the older population is expected to begin declining after 2030 and fall by approximately 30,000 by 2050. Because older people generally use healthcare services at a higher rate, the rise in their share of the population is often expected to limit the overall decline in healthcare demand despite population loss. Yet changes in household and family structures—the units of support—together with weakening transport and social infrastructure, and eventually a decline even in the number of older residents, are expected to accelerate the decrease in patients visiting the University Hospital, particularly from outside the Kagoshima healthcare region. As aging changes disease patterns and shifts healthcare from curing disease to supporting patients, the decline in patients requiring the advanced care traditionally provided by university hospitals is likely to become even more pronounced. In light of these factors, by 2050 the population aged 64 and under, which currently accounts for roughly half of all patients, is expected to decline by at least 30%, resulting in an approximately 20% decrease in patient numbers—equivalent to a reduction of about 120 beds. Maintaining the current care-delivery system would therefore create a serious operational crisis for the University Hospital. It is consequently essential to consider how best to optimize the patient populations served and the scale of care provided.

In planning Kagoshima University Hospital for 2050, its roles and functions must be continuously evaluated and improved in light of population decline, changes in disease patterns, healthcare demand, clinical performance, and the availability of healthcare professionals. To that end, the Hospital will collaborate with Kagoshima Prefecture, municipal governments, and prefectural and district medical associations to strengthen the prefecture-wide community healthcare system. A mutually complementary relationship will be established in which government authorities are responsible for healthcare

policy, financial support, maintenance of social infrastructure that enables patient access to medical institutions, emergency transport systems, and health and welfare measures; medical associations coordinate with local medical institutions and provide care close to residents; and the University Hospital provides advanced care, physician dispatch, education, research, and clinical support.

1) Emergency Care

In addition to improving transport systems from remote islands and rural areas, we will strengthen pre-transport clinical support, medical-information sharing, remote diagnostic imaging, and specialist consultation. The University Hospital's Emergency and Critical Care Center will function as a hub for the regional emergency network, working with fire services, government authorities, and local medical institutions to support emergency care across the prefecture.

2) Policy-Based Healthcare for Disasters, Infectious Diseases, and Other Emergencies

We will strengthen crisis-management systems for accepting patients, conducting wide-area transport, dispatching medical teams, securing beds during outbreaks of emerging infectious diseases, and dispatching healthcare personnel. These systems will address typhoons, torrential rain, earthquakes, volcanic disasters, the potential isolation of healthcare resources when disasters strike remote islands, and the Hospital's functions as a designated medical institution for Category I infectious diseases and a nuclear-disaster core hospital. We will also build a wide-area collaboration network extending beyond Kagoshima Prefecture to university hospitals and other institutions throughout Kyushu. During major disasters and infectious-disease outbreaks, we will take the lead in establishing a system that functions across regional boundaries through mutual supplementation, serving as the core of healthcare delivery adapted to the characteristics of southern Kyushu and its island regions.

3) Advanced Specialized Care for Cancer and Other Conditions

We will clarify the division of roles with local medical institutions for cancer surgery, advanced surgical procedures, rare diseases, transplantation medicine, and other services, focusing on care that requires advanced techniques and concentrated medical resources. We will also collaborate

with medical institutions not only within Kagoshima Prefecture but throughout Kyushu and Japan to create a wide-area system capable of sustaining low-volume specialized services.

4) Physician Dispatch and Human-Resource Development

In addition to undergraduate and postgraduate education, specialist training, and interprofessional education, the Hospital will regard physician dispatch to local medical institutions as a core responsibility. It will share a vision for community healthcare with the prefecture, municipalities, and medical associations and establish a system for flexibly deploying physicians to maintain the healthcare functions required locally. As a hub for supplying and developing the personnel who support healthcare across the region, the Hospital will assume responsibility for training professionals in fields needed locally, including general practice, while expanding team-based care involving nurses, public health nurses, pharmacists, clinical psychologists, rehabilitation professionals, and other disciplines.

5) Wide-Area Healthcare

The Hospital will provide care for conditions with limited case volumes, pediatric and perinatal care, advanced emergency care, and other services through collaboration across the prefecture or an even wider area. Rather than seeking to complete all care within a single planning region, it will serve as the “last line of defense” for advanced, rare, and specialized care that is difficult to provide locally.

6) Healthcare for the 28 Inhabited Remote Islands

Building on the training of physicians capable of treating a broad range of conditions, we will dispatch specialists as needed and strengthen support for local medical institutions through telemedicine and specialist clinical consultation.

Based on the above, and with the University Hospital of 2050 in view, we will review bed capacity and clinical services in response to changes in healthcare demand and workforce availability. At the same time, we will steadfastly fulfill responsibilities that general medical institutions alone cannot readily assume: emergency care, policy-based healthcare, advanced specialized care, human-resource development and physician dispatch, wide-

area healthcare, and the establishment of community healthcare systems that include remote islands.

Kagoshima University Hospital will evolve into “a wide-area core hospital that consolidates responsibility for advanced, specialized, and policy-based healthcare; returns personnel and expertise to local communities; and supports the healthcare-delivery system throughout Kagoshima Prefecture in collaboration with prefectural and municipal governments and prefectural and district medical associations.” It will also clarify its role while accepting gradual downsizing and establish the foundation for community healthcare that enables residents of the prefecture to live with peace of mind.

3-4. The Future of Community Engagement

As noted above, changes such as population decline and the falling birthrate and aging population will also have a major impact on the future of community engagement.

1) Collaboration with Other Universities, Private Universities in the Prefecture, and Related Institutions

As undergraduate enrollment quotas are expected to decline at national universities throughout Japan, it will be extremely important for Kagoshima University to further strengthen collaboration with other national universities, private universities in the prefecture, colleges of technology, and related institutions in order to sustain and advance its education and research functions.

Various forms of inter-university collaboration are possible, including the integration of national university corporations; a multi-university system under a single corporation based on the so-called umbrella model; united graduate schools, in which one participating university serves as the core institution with the faculty organization while also using faculty members and facilities from other universities; joint faculties and joint graduate schools established by multiple universities and operated integrally through shared organizations and deliberative bodies; corporations for promoting collaboration among universities; and educational collaboration through regional consortia.

The University already engages in several forms of inter-university collaboration, including the united graduate-school model in the United Graduate School of Agricultural Sciences, joint curricula in the Joint Faculty

of Veterinary Medicine and Joint Graduate School of Veterinary Medicine, and collaboration through a corporation for promoting university collaboration in the Faculty of Education. It is also advancing consortium-based regional educational collaboration, including credit transfers in liberal and general education courses with private universities and colleges of technology in Kagoshima Prefecture.

Going forward, we will make greater use of these existing foundations for collaboration and develop more substantive partnerships with higher education institutions both within and beyond the prefecture through joint curricula, expanded credit transfer, increased progression to graduate school, more advanced education and research, and joint research addressing regional challenges. Through these efforts, the University will further strengthen its role as a core hub for higher education and research in southern Kyushu and the island regions.

2) Collaboration with Government

The University has established the Kagoshima Prefecture Council for Industry-Academia-Government Collaboration to Advance Regional Industry, a prefecture-wide platform for promoting collaboration among industry, academia, and government, together with Kagoshima Prefecture, private universities and colleges of technology in the prefecture, businesses, and other organizations. Through solutions to challenges faced by regional industries, the Council has pursued sustainable and successive technological innovation, the creation of new industries, and the enhancement and advancement of existing industries.

Going forward, this framework for industry – academia – government collaboration must be further developed to advance industrial promotion, solutions to regional challenges, and human-resource development across Kagoshima Prefecture in an integrated manner. Collaboration with Kagoshima Prefecture is particularly important and must be strengthened in education and engagement with regional industries. In collaboration with municipalities in the prefecture, the University will also apply its expertise and research outcomes to initiatives tailored to distinctive local challenges that directly affect the region’s future, including achieving a decarbonized society, building a resource-circulating society, and revitalizing remote islands and mountainous areas.

Specifically, toward realizing zero-carbon cities, we will use comprehensive partnership agreements with municipalities and local

companies as a foundation for demonstration projects involving recycling technologies and new resource-circulation systems, thereby advancing their implementation in local communities. We will also work in even closer collaboration with Kagoshima Prefecture to minimize the impact of highly pathogenic avian influenza during the winter season on the poultry industry.

3) Collaboration with Industry

Kagoshima Prefecture has exceptionally strong primary industries centered on agriculture, forestry, and fisheries, and ranks second in Japan in agricultural output. Livestock products, which account for approximately 70% of that output, include pigs, beef cattle, and broilers; major crops include sweet potatoes, sugarcane, and tea; and fisheries products include yellowtail, greater amberjack, eel, and Pacific bluefin tuna. Production volumes for these products rank among the highest nationwide, including first- and second-place positions, making Kagoshima an important region supporting Japan’s food security.

Although many producers are individually operated, incorporated management entities account for a substantial share of agricultural output, and Kagoshima Prefecture also ranks near the top nationwide in the number of agricultural corporations. Given these regional characteristics, the University must further strengthen collaboration—centered on the Faculties of Agriculture, Fisheries, and Joint Veterinary Medicine—with agricultural corporations, fisheries-related companies, food-related companies, livestock-related companies, and other partners. We will pursue practical collaboration that contributes to the advancement of regional industries in areas including the social implementation of research outcomes, smart agriculture and fisheries, livestock health and epidemic prevention, food processing and distribution, and export promotion.

Kagoshima Prefecture is also one of Kyushu’s major hubs for semiconductor-related industries. The areas around Kirishima and Satsumasendai host major plants operated by companies with world-leading market shares in semiconductor packaging and electronic-component manufacturing. One of Japan’s largest AI data centers is also scheduled to open, further strengthening Kagoshima’s position as a digital-industry hub. Through comprehensive partnership agreements with related companies and local governments, the University will strengthen research collaboration and human-resource development—centered on the Graduate School of Science and Engineering and the Faculties of Science and Engineering—in

semiconductors, electronic devices, information and communications, AI, data science, energy, and related fields. These efforts will enhance the competitiveness of regional industries and develop highly skilled professionals who support next-generation industries.

Ensuring mobility, including regional transportation, is an important challenge for local revitalization, access to educational institutions, and the maintenance of healthcare and welfare services. In collaboration with municipalities, transportation operators, related companies, and other partners, we will examine sustainable forms of mobility suited to local circumstances and advance demonstration initiatives.

Collaboration with financial institutions is also important for expanding connections with local communities. Kagoshima Prefecture is home to diverse financial institutions, including national and regional banks, credit unions, and insurance companies. In partnership with these institutions, the University will promote support for the growth of regional companies, entrepreneurship and startups, students' career development, and financial-literacy education. In particular, we aim to become a university open to the region and easy for small and medium-sized enterprises in the prefecture to approach. Using financial institutions, economic organizations, municipalities, and other bodies as hubs, we will strengthen mechanisms that connect the technological, management, and human-resource development challenges faced by regional companies with the University's education and research resources. This will lower barriers to engaging with the University, promote joint research, technical consultation, human-resource development, and the employment and retention of students within the prefecture, while supporting new business development and startup creation by regional companies. By combining the networks and business-assessment expertise of financial institutions with the University's research outcomes, people, and educational functions, we will seek to create regional innovation through collaboration among industry, academia, finance, and government. We will extend these initiatives broadly across the prefecture, contributing not merely to particular localities but to industrial promotion and solutions to regional challenges throughout Kagoshima Prefecture.

3-5. The Future of Internationalization

KAGOSHIMA UNIVERSITY VISION

By 2050, Kagoshima University will establish itself as a hub for solving global challenges, taking island regions as its starting point, and integrating education, research, healthcare, and social implementation as a “university that co-creates a sustainable future for humanity.” As a nexus in the Asia-Pacific region, it will lead the world in multicultural collaborative learning, environmental resilience, and food and health security, while developing into a hub university that is rooted in the region and connected to the world. To this end, based on the Kagoshima University International Strategy, we set out below a vision for an international university that contributes to solving global challenges while remaining rooted in the region, built on four pillars: education, research, healthcare, and the infrastructure for advancing internationalization.

1) Education

We will move toward making international liberal-arts courses compulsory in undergraduate education, while systematizing and expanding international collaborative-learning courses to create a multicultural campus where Japanese and international students learn from one another as part of daily life. We will also enrich educational content while establishing mechanisms that enable every student to experience field-based learning in real-world settings, including overseas locations, remote islands, and international organizations. Furthermore, by expanding English-medium graduate courses, developing AI- and DX-enabled multilingual learning environments, and broadening international joint-degree programs, we will strengthen the educational foundation for learning with the world. We will also pursue further advancement of Japanese-language education for international students interested in employment in Japan.

2) Research

We will establish an international research hub addressing global challenges — including climate change, food security, emerging and re-emerging infectious diseases, and disaster resilience—from the perspective that island regions are a microcosm of the Earth. By strategically focusing on partner institutions overseas and building deep networks for joint research, we will connect research outcomes to international policy and social implementation. We will form world-class research clusters in marine science, volcanology, biodiversity, and environmental health, while also

serving as an open-science hub for sharing international collaborative research data.

3) Healthcare

We will develop and disseminate the “Kagoshima Model,” which combines healthcare for remote islands and rural areas with DX and multicultural healthcare, as an international standard for the Asia-Pacific region, evolving into a university that transforms rural healthcare worldwide. We will establish a multicultural healthcare system in which highly skilled international healthcare professionals can contribute, function as an international surveillance hub for infectious and zoonotic diseases, and implement next-generation healthcare using telemedicine, AI-assisted diagnosis, and medical robotics. We will also provide opportunities for international training in disaster and health-crisis management, thereby contributing to the development of globally capable healthcare professionals.

4) Infrastructure for Advancing Internationalization

We will establish a robust management system for implementing a university-wide international strategy and realize “One Kagoshima University.” By enhancing the expertise of faculty and staff engaged in internationalization and establishing data-driven management, we will build an organizational foundation that sustainably supports international collaboration. We will also strengthen our ability to communicate internationally and pursue an international public-relations strategy directly linked to attracting international students, thereby embedding internationalization in the University’s culture.

The University will promote multicultural, collaborative international education by enriching its international liberal-arts curriculum and expanding English-medium graduate education, while establishing an international research hub that addresses global challenges from island regions through strategic concentration on partner institutions. It will also advance Japanese-language education that supports international students’ transition into specialized study, engagement with local communities in collaboration with municipalities and other partners, and successful careers with companies and organizations in the prefecture, with a view to promoting their retention in Kagoshima. Furthermore, with the international standardization of the Kagoshima Model as a central focus, the University will transform rural

healthcare worldwide and establish an international hub for infectious-disease response and crisis management. Through a strong international management structure under “One Kagoshima University” and enhanced global communications, it will aim to attract international students and strengthen its international presence.

3-6. Financial and Human Resource Systems Supporting University Management

Financial Strategy

For Kagoshima University to carry out the education and research activities described in this vision and grow as a comprehensive university, it must shift from managing annual flows to managing accumulated assets, enrich its education, research, and related activities, strengthen its own financial foundation through measures such as enhancing its endowment, and create a virtuous cycle that further expands those activities.

In pursuing higher-quality education and research, the University will not provide every activity on its own; instead, it will work with higher education institutions within and beyond the prefecture, inter-university research institute corporations, national research and development agencies, and other organizations to flexibly realize the activities required.

1) Understanding the Financial Position, Sharing Information, and Achieving Overall Optimization

To strengthen data-driven management, the University will centrally monitor information on the flow of funds within the corporation, enhance its institutional research (IR) and management-accounting functions, and, together with the realization of flexible education and research organizations, achieve overall financial optimization aligned with the University-wide strategy.

The University will share and provide information on its financial position to faculty and staff and to external stakeholders in accessible forms, including through an integrated report.

The headquarters will also consolidate information and needs obtained through the University’s many channels with the national government, local governments, research institutions, companies, local communities, and

other stakeholders, evaluate them using its IR function, and reflect them in concrete decision-making.

2) Strengthening Fundraising

To strengthen its education and research foundation, the University must expand the acquisition of research funding from government agencies and other sources, as well as joint and commissioned research through industry–academia–government collaboration. It will therefore strengthen mechanisms that support researchers based on an understanding of research activities across the University and research-IR initiatives.

The University has three campuses in Kagoshima City and multiple facilities within and outside the prefecture. At these facilities, it will collaborate with the prefecture, municipalities, economic organizations, financial institutions, and others to identify the human resources and educational programs actually needed. Working as necessary with other institutions and companies, it will provide advisory services to businesses and local governments and programs that support recurrent education and reskilling. To this end, it will develop systems for identifying and analyzing changing needs, creating short-term programs based on those needs, and managing and operating such programs.

The University will position fundraising as a core organizational activity and strengthen the administrative structure supporting it. Taking advantage of anniversaries and other opportunities, it will use information sharing and networking through the Kagoshima University Fan Club and alumni-association membership outreach to strengthen ties with alumni and fundamentally expand donation solicitation.

3) Inventorying Assets, Assigning Appropriate Value, and Promoting Their Use

The University’s greatest assets are its faculty and staff. Taking national guidelines and other standards into account, it will appropriately value its intellectual assets as the value of researchers, research outcomes, and the research management that enhances those values, and strengthen organizational efforts to ensure appropriate compensation through joint research and related opportunities.

The University will also promote branding for agricultural, livestock, and other products produced on its campuses.

4) Advancing Facilities Management

A university is a place where students, faculty, staff, and many other stakeholders learn, live, and move through. Rather than being a closed space, it is expected to host diverse activities that foster lifelong growth and innovation. Kagoshima University's campuses enjoy favorable locations in central Kagoshima City, and this advantage should be used more fully to integrate the city and campus. The University will therefore strengthen collaboration with local governments and companies and develop concrete approaches to campus-based urban development. In the future, it aims for the University and local governments to enhance one another's attractiveness.

Meanwhile, although the University is systematically improving its facilities under the Campus Master Plan and Infrastructure Life-Extension Plan, financial constraints have delayed improvements and aging has progressed. In light of the University's mission and the direction of education and research, it will assess the use and necessity of land and facilities, optimize the allocation of its holdings, consolidate and streamline them, and make effective use of available space. For underused facilities, it will consult with local governments, companies, and others to maximize their use.

5) Strengthening Functions as a Co-Creation and Disaster-Preparedness Hub

The Sixth Five-Year Facilities Improvement Plan for National University Corporations and Related Institutions, beginning in FY2026, identifies the implementation of Innovation Commons (co-creation hubs) and the realization of regional disaster-preparedness hubs as directions for national university facilities. By expanding Innovation Center initiatives and improving facilities through the 80th-anniversary project, the University will strengthen its functions as a knowledge-centered co-creation hub through startup support, entrepreneurship education beginning at the primary and secondary levels, and related initiatives. In doing so, it will lower barriers to engagement with the University by strengthening outreach to local residents and companies.

Because Kagoshima Prefecture is highly exposed to typhoons, volcanic activity, and other disasters, the University serves as a co-creation partner that works with the region to solve challenges and create value. In addition to actively contributing to disaster preparedness through education and research, it has roles as a disaster-base hospital and an evacuation site

during emergencies. The University will systematically renew lifelines and strengthen disaster resilience and preparedness functions.

6) Investment in Information Technology

In collaboration with educational institutions, companies, and others, the University will actively invest in information technologies—including AI, campus networks, ICT for education, research, and administration, and cybersecurity—and develop and secure the necessary personnel. Through these efforts, it will advance education and research, enhance student support, and improve administrative efficiency.

7) Strengthening Organizational Structures for Finance and Facilities and Enhancing Fund Management

To enhance education and research toward 2050, it is essential to strengthen organizational structures capable of handling increasingly complex finance and facilities operations. To deepen staff expertise, the University will expand strategic personnel exchanges with companies, local governments, and other organizations and, as needed, recruit external professionals with financial expertise.

To strengthen its education and research foundation, the University will also enhance fund-management initiatives while monitoring economic conditions and seeking the views of the Fund Management Committee.

Human Resources Strategy

1) University-Wide Reforms

① Responding to the Desired Form of National Universities in 2050

At a time when the future is difficult to predict, the University will establish a responsive structure that enables flexible reorganization of education and research units, including faculties and graduate schools. Academic-domain members will not be tied to individual units; instead, researchers in related disciplines will be grouped together. This will allow flexible responses even when student programs, research centers, and other organizations are restructured. In accordance with the President's Vision and the Medium-Term Objectives and Plan, the Academic Research Institute will be maintained in an optimal state and made fully effective. The organization created through the unification of technical departments will also be reviewed continuously, and technical staff will be positioned as a group of professionals with advanced skills who contribute to

strengthening the University's research capabilities, including through the development of career paths.

To secure time for faculty members' education and research and to respond to the increasing sophistication and specialization of university management, some duties traditionally performed by faculty members will be reassigned to advanced professional, administrative, and technical staff. The operation of academic-domain councils, faculty meetings, and other bodies will be streamlined to improve efficiency. A multi-track personnel system will also be introduced to permit movement among faculty, administrative, technical, and advanced professional positions, enabling new career paths based on individual qualities and capabilities.

② Rebuilding the Evaluation System and Aligning Rewards with Performance

To enable all faculty and staff to contribute in diverse ways, the University will introduce a system that highly values contributions in areas of individual strength and commitment to the University's mission, taking effort allocation into account, and provides incentives commensurate with performance. At the same time, it will respond rigorously to poor performance and clarify standards for measures such as demotion.

③ Increasing Flexibility in Personnel-Cost Management

To secure flexible employment and treatment unconstrained by funding source or organizational affiliation, the University will broaden personnel-cost management units for staff employed from sources other than regular personnel expenses, including by combining diverse funding sources, while rationalizing expenditures and headcounts in relation to regular staff. It will introduce a University-wide "Personnel Cost Fund System." For non-faculty staff, it will also introduce a personnel-cost cap and shift from headcount management to total personnel-cost management.

④ Continuing Operational Efficiency Improvements with a Goal of Zero Overtime

Based on the June 30, 2023 report "Human Resources Policies for Administrative Staff during the Fourth Medium-Term Objectives and Plan Period," the University will continue improving operational efficiency and aim to create a workplace without overtime.

⑤ Ensuring Opportunities for Faculty and Staff Development

The University will require early-career faculty and staff to study abroad and support the associated costs. For administrative and technical staff, it will introduce a study-support scheme for graduate-school enrollment to deepen specialized knowledge and acquire knowledge needed for university management. Qualifications required for technical duties will be treated as formal work-based professional development. Role-specific and cross-functional training programs will be developed to cultivate future executives. To emphasize continuity, handover matters will be documented and handover manuals for managers and others will be developed.

⑥ Advancing DE&I

The University will advance DE&I in accordance with the Kagoshima University Declaration on the Promotion of Diversity, Equity and Inclusion. It will establish and maintain targets for women, early-career, and international researchers based on the Science, Technology and Innovation Basic Plan and the Basic Plan for Gender Equality. It will uphold the Kagoshima University Support Declaration for work–life balance. By increasing the childcare-leave uptake rate among male faculty and staff, expanding flexible work arrangements, abolishing core hours, and taking other measures, it will support flexible working patterns that enable faculty and staff to balance family life and work. The University will continually monitor the age composition of early-career, mid-career, and experienced personnel across staff categories and work to maintain appropriate staffing.

2) Review by Staff Category

① Faculty Members

Rather than requiring all faculty members to perform the same missions — education and research, social contribution, international exchange, university management, healthcare, and others — the University will review roles so that duties may vary by position and career stage, for example by emphasizing research in earlier career stages and education in later stages, and will allow flexible adjustment of effort allocation. It will seek to achieve and maintain the target research-effort ratio set out in the Science, Technology and Innovation Basic Plan. As a

rule, newly hired full-time faculty members will initially receive five-year fixed-term appointments so that the University can confirm their capacity to contribute to education, research, social contribution, international exchange, and university management. A fair and transparent personnel-evaluation system will be established that takes effort allocation into account regardless of the duties on which an individual concentrates.

By maintaining the Academic Research Institute system in an optimal state and making it fully effective, the University expects the following benefits:

- Flexible faculty deployment when programs in which students are enrolled, including faculties and graduate schools, or research centers are reorganized to address social transformation and interdisciplinary education and research.
- Maintenance of academic disciplines, including the management of personnel costs.
- Appropriate faculty evaluation through peer review based on mutual understanding of the characteristics of each academic discipline.
- Deeper research activity through day-to-day proximity and greater shared use of core-facility research equipment in collaboration with technical staff.
- Continued provision of common education courses across the University.

The University will increase the recruitment of doctoral supervisors with private-sector research and development experience and establish flexible rules for determining supervisory qualifications. At the same time, it will create a framework that facilitates appointments from industry by enabling salaries to be offered in line with the responsibilities of the position when candidates transition from private companies and other organizations. To support professional development, it will encourage placements at overseas research institutions and provide measures that include securing replacement faculty members during overseas assignments.

② Administrative Staff

Including regular staff, specially appointed staff, and administrative assistants, the University will eliminate mismatches between responsibilities and actual duties. Taking into account a capped total personnel budget, including advanced professional staff such as URAs, UEAs, and UIAs and staff assigned to limited occupational fields, it will

review staffing levels, reorganize duties by responsibility and position, and redeploy personnel. It will break down vertical divisions among regular administrative functions such as general affairs and human resources, accounting, student affairs, and research. Based on the nature of the work, it will develop specialist personnel, use limited-field staff and administrative assistants, and outsource operations; in particular, it will examine integrating general affairs and human resources with accounting into a single administrative unit.

Administrative offices in individual units will become part of the headquarters administration and be integrated in line with the Academic Research Institute system. Duties common to all academic domains will, in principle, be centralized, while the work of each domain office will be reorganized toward functions limited to faculty selection and operation of the responsible units, including faculty meetings. This will optimize the administrative structure. Promotions, pay increases, demotions, and pay reductions will be implemented on the basis of evaluation results, and a fair and transparent personnel-evaluation system will be established.

As professional-development support, the University will require training at universities and other institutions overseas, primarily partner institutions, and establish systems that enable staff to gain a comprehensive perspective on Kagoshima University through secondments to other organizations, placements at research institutions, and graduate-study support.

③ Technical Staff

In accordance with the Guidelines on Personnel Systems for Technical Staff, the University will organize technical staff as an autonomous group of highly skilled professionals independent of faculties and departments. As the Academic Research Institute system for faculty members becomes fully effective, the technical-staff organization will be kept in an optimal form. Technical staff will be positioned not merely as assistants to researchers but as technical professionals capable of strengthening the University’s research capabilities through their advanced expertise. They will be evaluated as personnel essential to operating core facilities and regarded as partners and technical specialists who support faculty education and research.

The University will substantially revise personnel systems for treatment and career paths that retain pre-incorporation practices. It will establish

a fair and transparent personnel-evaluation system, including revisions to salary rules that permit incentives comparable to the annual-salary system for faculty members, and create director- and manager-level positions or their equivalents to strengthen career paths for developing managers. At the same time, it will adopt an organizational structure that facilitates movement into research careers, including mechanisms that make transfers between faculty and technical positions easier and an internal career-path consultation office linking researchers and technical staff. A cross-appointment system will be introduced to secure outstanding personnel from the private sector.

The University will support graduate study and formally recognize as work opportunities for technical development, including obtaining qualifications required for duties and earning degrees within the University. It will flexibly count time spent on such development as working time and provide support aimed at capability enhancement. In accordance with the Science, Technology and Innovation Basic Plan, it will determine and increase the appropriate number of technical staff needed to strengthen the University's research capabilities.

④ Advanced Professional Staff

The University will determine the appropriate staffing levels for advanced professional personnel, including URAs, UEAs, and UIAs, and increase their numbers. To enable faculty members assigned to non-research centers and administrative or technical staff to transition into these roles, it will continually review recruitment, development, and career paths and provide development support through secondments to other institutions, overseas placements, graduate study, and related opportunities.

The February 2025 report of the Central Council for Education, A Vision for Enhancing Japan's "Total Knowledge": Reconstructing the Higher Education System, points out that graduates of higher education institutions must recognize the value of education, including their own growth, and contribute actively to society, while institutions must earn society's understanding through education, research, and regional engagement and through stronger personnel exchange, joint research, and other collaboration with industry. As a university within Japan's national university system, Kagoshima University will present in this vision the value it can provide to local communities. It will

also continue to report on its progress and activities through integrated reports and communications on open science.

4. Conclusion

The social changes leading toward 2050—including population decline and aging, growing uncertainty in the international order, and dramatic advances in digital technology—are complex and irreversible. They will fundamentally transform social structures, requiring essential changes not only in communities and industries but also in the qualities and capabilities expected of people. In such an era, universities must go beyond merely transmitting knowledge and further enhance their significance as foundations of knowledge and wisdom that support society's sustainability and growth.

Building on its strengths as a comprehensive university rooted in the region, Kagoshima University will organically connect its functions in education, research, healthcare, community engagement, and internationalization, contributing to a diverse, resilient society with strong growth potential. In particular, it will directly confront realities such as population decline, a super-aged society, and challenges unique to remote islands and rural areas, while reassessing the richness of traditional cultures preserved in those communities. Extending, across regions and internationally, the knowledge gained by addressing regional challenges in ways that create new value is precisely the role expected of the University—and a challenge capable of providing a model for the future of Japan and countries around the world. Accurately anticipating future human-resource demand and continuously and reliably supplying highly skilled professionals in the fields required is also central to the social mission of a university as an educational institution that supports society.

Furthermore, in an era of rapid environmental change, it is essential to avoid rigid organizations and systems, continually review education and research structures and university management, and achieve agile and flexible operations. Strategic management will become increasingly important, including deeper inter-university and industry-academia-government collaboration, participation in international knowledge networks, and the optimal allocation and effective use of limited resources.

This vision reassesses the present from the perspective of the future in 2050 and sets out the role Kagoshima University must fulfill and the direction it should take with 2100 in view. Going forward, the University will share the

principles and policies set forth in this vision across the institution and steadily translate them into concrete measures, further advancing its functions as a sustainable university that continues to respond flexibly to social change.