Strategic Market Creation Plan (Roadmap)

Setting envisioned society, index, and lifestyle to be achieved by 2030 in the four areas of health and longevity, energy, the next-generation infrastructure, and regional resources. Organizing long-term progress schedules of envisioned society around 2020 (intermediate stage) and development of measures in each strategic area by 2030.

Theme 1

Extending the nation's "healthy life expectancy"

Theme 2

Realizing clean and economical energy demand and supply

Theme 3

Building safe, convenient and economical next-generation infrastructures

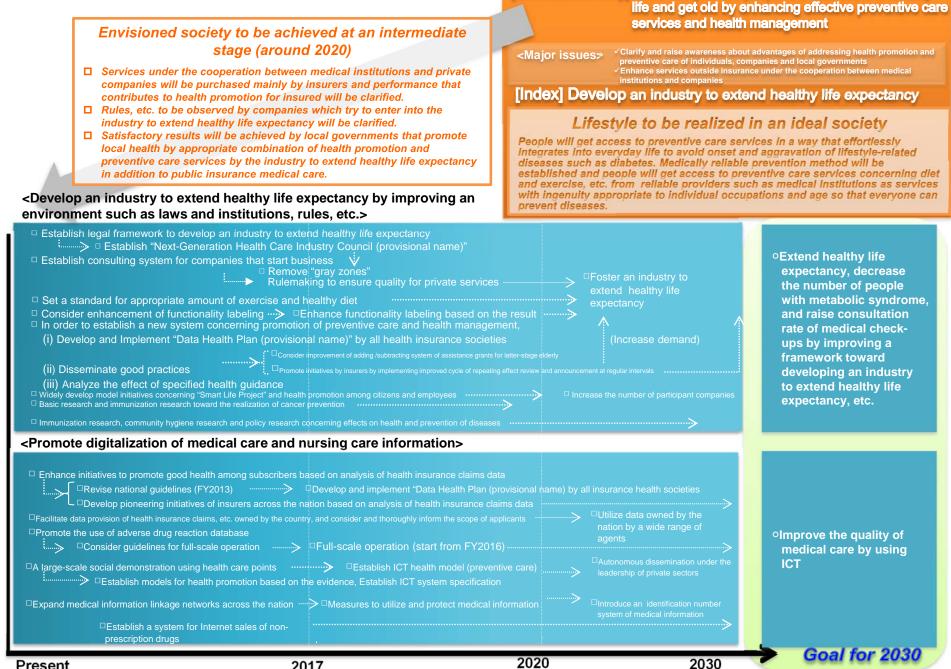
Theme 4

Building regional communities that use their unique local resources to appeal to the world

Theme 1 Extending the nation's "healthy life expectancy"

The society where people are able to live a healthy life and get old by enhancing effective preventive care services and health management

[Envisioned society] The society where people are able to live a healthy



The society which can provide the world's most advanced necessary medical care by activating medicine-related industries

Envisioned society to be achieved at an intermediate stage (around 2020)

- We will realize the steady progress toward the goal of conquering cancer, incurable diseases, rare diseases, infectious diseases, dementia, etc., and R&D in Japan will lead the world.
- □ The safety system which also respond to new medical technologies including regenerative medical care will be established and operated and the power of brands will be also formed in global deployment of Japanese medical technologies and services.
- Portfolios of Japan's international health cooperation and international medical cooperation in business projects will be properly built mainly in emerging countries

<The most advanced pharmaceuticals, medical devices, regenerative medical products>

[Envisioned society] The society which can provide the world's most advanced necessary medical care by activating medical care industries

- - generation technologies and apply human resources properly

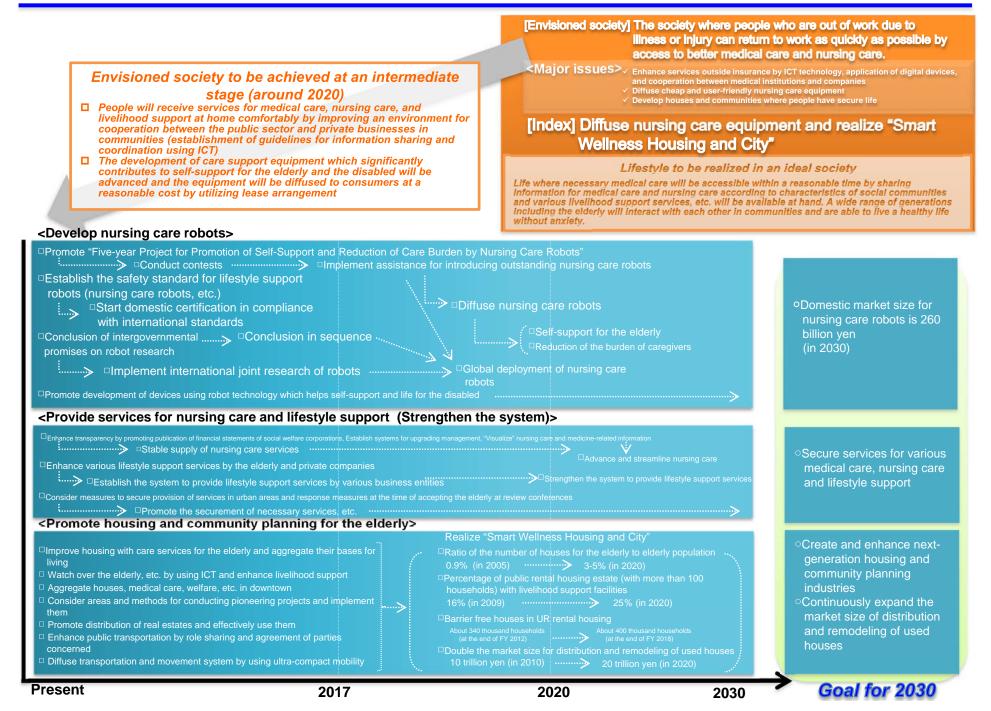
[Index] Improve international competitiveness in health and medical care industries

Lifestyle to be realized in an ideal society

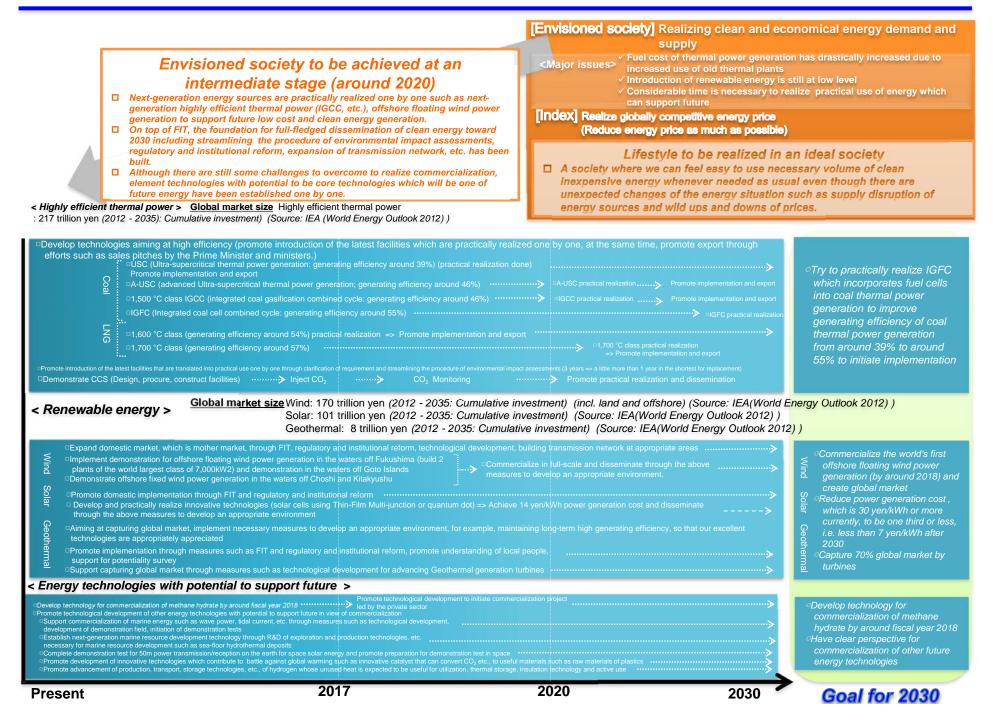
Treatment techniques for incurable diseases such as cancer, dementia and auto immune disease will be improved. As for cancer, "Ten-year General Strategy Against Cancer" will be steadily enhanced and will promote early detection, early treatment and prevention of recurrence which will enable people to organize their life peacefully. As for dementia, the growth rate of the patients will be 0% by improving early detection and prevention. R&D for development of drastic treatment techniques will make progress.

 Significantly broaden the scope of advanced he Improve the innovation evaluation method of ne Amend Pharmaceutical Affairs Act based on ch Establish an act for securing safety of regenerative metions Improve rational safety standards, etc. bathe actual situation of regenerative medica Improve rational safety standards, etc. bathe actual situation of regenerative medica Enhance strategic consultation on pharmaceutitie safety measures, and realize PMDA-WEST Promote personal exchange between PMDA ar Build a new system (post "Super Special Zone of-the-art Medical Treatment Improve early-stage and exploratory clinical trial Build a network to support drug discovery Establish post-marketing information collection simedical products Create clusters to support practical use of medical Improve Highway Initiative for Realization of Remincluding iPS cells Build a national database for patients with intract the nation 	tasks for integrated research management ternational standard high level clinical research and ersion of NIH" althcare services w medical materials of pharmaceutical, medical aracteristics of regenerative medical care and sed on leare ad laws and enforcement of new laws cal affairs in PMDA and systems for review and care bill care d universities, etc. (provisional name)") based on the achievement centers and clinical trials core hospitals expetent to confirm long-term safety for medical care bill care bill care bill care centers and clinical trials core hospitals ad devices generative Medical Care, Promote research for table diseases, etc., Network research institu	cal device and their combinations I medical devices Completely eliminate the assessment lag for pharmaceuticals and medical devices by accelerating the assessment process by strengthening the PMDA system (in 2020) ents of Special Zone for State- e pharmaceuticals I devices and regenerative invovative levices for regenerative medical cares	 Promote R&D and implement clinical research and trials by fulfilling the function of "Japanese version of NIH" Promote practical application of innovative medical devices and regenerative medical care by further speeding up review process after considering quality securement and safety measures of post-marketing products Promote commercialization by Prior Consultation system Put pharmaceuticals on the market for the first time Put innovative medical devices on the market for the first time romote practical application of egenerative medical products 	 Improve trade balance of pharmaceuticals and medical devices Increase the number of regenerative medical products which move into clinical research and trials and that of new regenerative medical products to world top level by 2030 in the regenerative medical care industry
□Upgrade the process for drug discovery using so Global outreach of medical mari □Promote business-based global deployme □Establish around 10 Jap □Promote R&D and support supply of pharm cooperation between the public and priva	ket > ent of medical technologies and service banese medical centers by 2020, with for maceuticals for emerging countries und	ocus on emerging countries	ation, Medical Excellence Japan □Establish around 50 by 2030 >	•Expand overseas market size of Japanese medical technologies and services to 5 trillion yen

The society where people who are out of work due to illness or injury can return to work as quickly as possible by access to better medical care and nursing care



Theme 2 Realizing clean and economical energy demand and supply



[Envisioned society] A society where efficient distribution of energy is realized through competition <Major issues> There is no efficient inter-regional demand and supply adjustment system among electricity companies Envisioned society to be achieved at an intermediate Users cannot use or save energy to suit their lifestyle Even if users want to change electricity company, there are no stage (around 2020) [Index] Increase options for electricity use and expand companies that participate in □ Peripheral service for household is created one after another by electricity deregulation. electricity business □ Households and individuals can select electricity company. Rate menu can be selected Realize globally competitive energy price as well. (reduce energy price as much as possible) [Reposted] Diverse players participate in energy supply and control including consumers, also integration of various industries (electricity, gas communications, etc.) is promoted. Lifestyle to be realized in an ideal society Dissemination of storage batteries which are commonly combined with renewable Like mobile phones, users can pick an energy provider freely and select a energy, excess energy is stored, and can be utilized during night-time and in case of outage plan meeting their needs from a wide variety. Development of next-generation device, parts and materials makes progress, and they Through disseminating storage batteries, wide-area operation, devices, parts are incorporated into every point from production, distribution and consumption, so and materials that thoroughly eliminate waste, efficient energy use without that energy is efficiently used. limitations on time and place will be achieved to realize a society in which optimal energy use will be possible all over nation, < Streamline energy distribution and establish growth base (Electricity System Reform) > Disseminate smart meters that form infrastructure (details are described later) The Organization for Amend laws necessary for the Electricity System Reform Nationwide Coordination of Transmission Operators (by (2013 Ordinary Diet session) Coordination of Transmission Operators around 2015) Full liberalization of power (2014 Ordinary Diet session) generation and electricity retail business (by around □ 3rd amendment (Aims to submit in 2015 Ordinary Diet session) Make transmission network New players appear> Start full-fledged entry of aggregators and new electricity available for everybody freely Strengthen risk response ability of oil/LP gas supply infrastructure (refineries and service stations), prevent industrial accidents, improve mobility of stockpiles. (neutralize power-grids), promote secure and stable supply of oil/LP gas in the community, etc. abolishment of the regulations on retail electricity rates prices to support enhancing regional link (by around 2018 to 2020) □Enhance Hokkaido–Honshu linkage facilities (present: 600,000 kW) 🛛 …………………………… Enhance up to 900,000 kW ……… lines, etc. < Storage batteries > Global market size Storage batteries: 1 trillion yen (present) => 20 trillion yen (2020) Reduce cost for large grid □Promote introduction of large grid storage batteries through R&D, demonstration, etc. storage batteries to be half or Promote introduction of fuel cell vehicles through regulatory and institutional reform related to hydrogen refueling stations that supply fuel to such vehicles " less (23 thousand yen/kWh or Dupport for establishing Japan's initial market of stationary storage batteries, at the same time, through acquiring international standards according to less). Capture 50% global Japan-originated safety standard (JIS), promote capturing global market. market (2020) < Next-generation device, parts and materials (power electronics, etc.) > (incorporated into every point from production, distribution and consumption) Global market size power electronics: 6 trillion yen (present) => 20 trillion yen (2030) Technical development and dissemination of power electronics Establish national projects and intensive R&D support Aim to fully commercialize E.g.) Develop new materials (SiC, GaN, diamond), Establish evaluation method> Standardization design devices and circuits, systemization, etc. next-generation power Promote dissemination of equipment incorporating power electronics globally through support for global deployment of energy-saving technology (FS study, etc.) ----electronics using new (For example, when power electronics is incorporated into air conditioning system, 30% energy is saved, with power electronics using new material (SiC), when applied such materials to trains, materials, etc. by 2020 sometimes further 40% energy is saved) Also for next-generation devices, parts and materials (ultra-low power consumption devices, photonic technology, ultra-light structural materials with high strength, etc.) promote technical development and systemization aiming at commercialization. Goal for 2030 2017 2020 2030 Present

	[Envisioned society] A society where energy is consumed wisely				
 Envisioned society to be achieved at an intermediate stage (around 2020) Electrical equipment incorporating the latest electronic technology is widely and commonly used. More smart meters are used, which makes it easy to manage energy through networking of electrical equipment. Dissemination of electric vehicles is accelerated. 50% of next-generation automobiles to total new car sale. Integrated use of electricity and heat is widely recognized. 1.4 million residential fuel cells are used in 2020. By phased obligation to comply with energy-saving standards, energy-saving housing and buildings become common (100% of new houses and buildings comply with energy-saving standards) 	 Major issues> * Increasing energy consumption in houses, buildings and transportation Setting rid of energy-saving that tries everyone's patience and even affects level of lifestyle and plant productivity [Index] Further Improve world best energy efficiency Lifestyle to be realized in an ideal society Lifestyle to be realized in an ideal society Lifestyle and plant provention and usage is improved, at the same time, through the energy networking, consumption is optimized without waste. Next-generation automobiles such as hybrid cars, plug-in cars, electric cars, fuel cell vehicles are widely used. Using cogeneration to generate electricity and heat together, energy can be consumed thoroughly without waste. Houses and buildings have high heat insulation performance to make people's life comfortable throughout the year with minimum air conditioning. In addition, average bouses and buildings can generate electricity and energy they use by themselves 				
< Energy management system > <u>Global market size</u> Investment on energy-saving (Incl. Energy management system) 14 trillion yen (present) => 50 trillion yen (2035) (Source: IEA (World Energy Outlook 2012)					
 Disseminate smart meters as the infrastructure Standardize interface with HEMS, reduce testing fee, clarify handling based on Measurement Act, (implementation "Promote full-fledged implementation by "Implement smart meters nationwide including general hearty 2020s" Disseminate HEMS, BEMS, MEMS, etc> In accordance with diverse rate menus (aforementioned "Consider privacy policies in anticipation of new services utilizing electricity use data, etc. Next-generation automobiles > Global market size Create initial demand by supporting for introduction of EV, PHV and CDY> Make self-reliant market 	households in (disseminate nationwide) ad), etc. start full dissemination of HEMS, BEMS, MEMS, etc. households and factories throughout the nation and HEMS, BEMS, MEMS, etc. are introduced in a standard manner (Japan becomes a smart society) smart society)				
 Promote international standardization of batteries and charger controller, etc. Provide 100,000 chargers Introduce fuel cell vehicles to the market and install hydrogen refueling stations in advance (100 stations focusing on 4 metric) 					
Energy-saving technologies such as fuel cells and energy-saving appliances > Global market size Fuel cells: 0.2 trillion yen (present) => 1.1 trillion yen (2020) Energy-saving investment: 14 trillion yen (present) => 50 trillion yen (2035)(Source: IEA(World Energy Outlook 2012))					
 USupport for introduction of residential fuel cells (ENE-FARM) - > Expand self-reliant dissemination Through technological development (reducing use of platinum in catalyst), standardization, etc., promote domestic implement Enhance application of the top-runner system EcoCute (electric water heater), combined machines and printers (added in March this year) LED bulbs (to be added by this summer) Amend Energy Saving Act targeting construction materials (insulators, windows, etc.) => Promptly add Phased obligation to comply with energy-saving standards of housing and buildings by 2020 (large size: 2,0) Large size	nentation, at the same time, support global deployment to Europe, Korea, etc. ····> Id as target nolom ² or larger, medium size: 300 ~ 2,000m ² , small size: less than 300m ²) mply mply molitication to Comply Cobligation to Comply (Buildings) on average, new buildings in 2030 comply				
Present 2017	2020 2030 Goal for 2030				

Theme 3 Building safe, convenient and economical nextgeneration infrastructures



- Highly efficient inspection, maintenance and repair using sensors, robots, non-destructive testing technique, etc. are applied to 20% of domestic important infrastructures and aging infrastructures
- **I** 30% global markets is captured for sensors, robots, etc. for inspection, maintenance and repair
- **Goal for practical realization of new materials such as** self-restoring materials becomes clear

[Envisioned society] A society where safe and resilient infrastructures are provided at low cost

<Maior issues>

- Establishment and dissemination of safety and reliability of infrastructure maintenance technology using sensors, robots, etc.
- Opening public data such as transportation data, promoting to make them big data and enhancement of geospatial information through development and construction of satellites

[INGEX] Construct new maintenance systems incorporating advanced technologies such as IT, and achieve zero serious accident of important infrastructures in 2030

Lifestyle to be realized in an ideal society

□ Infrastructure maintenance, repair and update can be properly conducted nationwide using IT, robots, etc. and early anomaly detection forestalls accidents. All citizens can live without worry.

< Basic plan for longer life of infrastructures >

Formulate basic plan for longer life of infrastructures (basic policy) (Targets, roadmap, roles of the government and local governments, academic industrial alliance, etc.) -----> DFormulate plan for longer life of infrastructures (action plans) (implements full check, review for management criteria, formulate facility-specific plan, develop new technologies, implement. demonstration tests, etc.) < Infrastructure inspection and diagnostics systems > Sensors: 0.5 trillion ven (present) => 10 trillion ven (2030) / robots: 5 billon ven (present) => 2 trillion ven (2030) Global market size Monitoring: 0 yen (present) => 20 trillion yen (2030) Digitize infrastructure information (basic information, inspection, maintenance and repair information) and integrate with geospatial information Install various sensors to infrastructures and repair techniques Overseas survey by public and private sectors, building connection>> Full-fledged overseas deployment of intelligent infrastructure (package) < New materials > Global market size Self-restoring materials, etc.: 0 yen (present) => 30 trillion yen (2030) R&D for new materials such as self-restoring materials under collaboration of the related ministries and agencies < Space infrastructure (quasi-zenith satellite and remote sensing satellite) > Market size of satellite data: 0.1 trillion yen (present) => 1.6 trillion yen (2030) Global market size Market for satellite positioning: 11 trillion ven (2005) 29 trillion yen (2030) => Quasi-zenith satellite ·····> □[4-satellite system] ······> □[Targeting 7-satellite system] ·····> [1-satellite system] Use domestic data> Promote use of positioning data in Asia-Pacific region (realize a society where geospatial data are used in an advanced manner) Goal for 2030

Highly advanced and efficient inspection. maintenance and repair are applied to domestic important infrastructures and aging infrastructures using sensors, robots, nondestructive testing technique. etc.

Capture 30% of global markets of sensors, robots, etc. for inspection. maintenance and repair

Present



Envisioned society to be achieved at an intermediate stage (around 2020)

- □ 20% of domestic vehicles (stock-based) have driving safety support devices/systems. 30% global market is captured.
- Public and private various information effective to control congestion or traffic accidents are started to be integrated and utilized.
- Accurate grasping of position information of cargos is available.

[Envisioned society] A society where people and goods are provided with safe and convenient transportation

<Major issues>

- Social implementation of new technologies that supplement declined physical
- performance or cognitive function of the elderly such as reaction speed
- ✓ Seamless distribution system to cope with expanding economic activities to Asian region.

[Index] Reduce traffic accident drastically by 2030

Lifestyle to be realized in an ideal society

- A secure life in which traffic accidents are reduced drastically and no traffic accident.
- Congestions are reduced drastically and people and goods are transported smoothly.
- □ Distribution service is provided at cost and speed that does not make users be conscious of distance and time.

2030

Goal for 2030

< Driving safety support devices and systems, self-driving systems >

	ces and systems: 0.5 trillion yen (present) =>	20 trillion yen <i>(2030)</i>	
 Criving safety support devices and systems Formulate future vision to promote ITS Implement public road demonstration tests of driving safety suproad-to-vehicle communication, etc. Self-driving systems > Develop self-driving systems utilizing driving safety support systems 	Develop safety standards, etc., and international standardization, promote implementation port systems utilizing inter-vehicle communication,		^o Driving safety support device/system is included as standard equipment for domestic sale of new cars, and in stock-base, almost all cars have them. 30% of the global share is captured. Trial use of self-driving
 Congestion control > Global market size Congestion information provision and prediction systems (navigation system, etc.): 2 trillion yen (present) => 30 trillion yen (2030) Copen data possessed by public institutions Congestion control test by utilizing integrated use of public and private information in model areas (model operators, special-zone and preferential measures)			Various public and private
Integrate big-data < Advancing distribution systems >	■Establish active congestion control system combining wit	n GPS data, etc.	information effective for congestion control, etc. is integrated and used .
Global market size Promote acceleration and paperless of trade-related procedures, etc., by NACCS	Promote collaboration of distribution information systems of ports and harbors with other countries	□Make distribution systems of our country more efficient	 Advanced distribution systems without loss

Theme 4 Building regional communities that use their unique local resources to appeal to the world

A rich rural society which produces world's best quality agricultural, forestry and fishery products and food produce

Envisioned society to be achieved at an intermediate stage (around 2020)	[Envisioned society] A rich rural society which produces world's best quality agricultural, forestry and fishery products and food produce		
	<pre></pre> <pre><</pre>		
 Consolidation of farmland to motivated entities is realized. (KPI: Ratio of farmland used by motivated entities in total is 80% (49% in 2010)) Diverse players such as corporates enter in agriculture to create active innovation. 	 Product-out mindset to produce goods Rich agriculture, forestry and fishery products and dietary culture are not used actively 		
 Diverse players such as corporates enter in agriculture to create active innovation. (KPI: The number of corporate management entities is 50,000 (4 times more than 2010) 	[Index] Realize aggressive agriculture, forestry and fishery industries		
Productivity improvement due to larger farmland operation reduce production cost.	Lifestyle to be realized in an ideal society		
(KPI: With combined efforts of industry in terms of materials and distribution, rice production cost by motivated entities reduced by 40% vs. the current national average (16 thousand yen per 60kg)	By matching consumer-oriented market-in mindset and agriculture, forestry and fishery taking advantage of characteristics of local areas, excellent agricultural, forestry and fishery products and food produce of Japan will be		
Through strategic cross-industry partnerships, strength of our country's agriculture is maximized.	exported all over the world and local agricultural, forestry and fishery products and food produce will be sweep the		
(KPI: "AFFrinnovation" (the sixth industry) market is 10 trillion yen (1 trillion yen in 2010)) Under market−in mindset, agriculture grows as an export industry.	global market. Agriculture is converted into growth industry and there is stronger collaboration between diverse main players such as		
(KPI: Export amount of agricultural, forestry and fishery products and food produce is 1 trillion yen	young people, the elderly and companies and agriculture, so that rural society will be active and become basis for creating innovation.		
(approx. 450 billion yen in 2012))	Using rich resources inherited in rural areas as pabulum, regional potential can be exerted by adequately and fully exerting multifaceted functions of agriculture, forestry, and fishery throughout the time to the future.		
*AFFrinnovation(the sixth industry): adding value to agricultural products, forest products, and fishery products in an innovative way, making new combination, creating value chain.			
< Consolidation and intensification of farmland to motivated entimes	* Local revitalization board for agriculture, forestry and fishery will discuss future policy direction and formulate "The local revitalization plan for agriculture, forestry and fishery" as early as possible.		
(strengthening production) > Ratio of farmland used by motivated entities	49% (2010) => 80% (after 10 years)		
©Consolidate farmland to motivated entities ©Enhance measures against deserted farmland	unsolidation by prefectural institutions and utilization of deserted farmland		
R Articulture accessible entry liste particulture by location formuland	by> Review further liberalization of corporate entry into agriculture under ownership system while considering the impact on promotion of consolidation and intensification of farmland of a considering the impact on promotion of consolidation and intensification of farmland		
icosing raimanu	s enlargement.		
Intensified implementation of "Farmers and Farmiand Plan" Foster motivated entities based on plan and promote farmlar Implement all measures to promote corporate farmers and large-scale family farmers, encourage young people to work in farms and encourage corporate			
Support initiative to foster farm operators through utilization of Japan Institute of Agricultural Management	Resise the level of operating entities young people new comerc settling		
< Export, overseas deployment strategies, etc.(Expand key frontiers) > Export of agricultural, forestry and fishery			
Promote the use of Japanese food ingredients (Made FROM Japan) – – ≻ Promote collaboration of Japanese food ingredients with the world's c	uisine, foster human resources, etc., diffuse Japanese food culture in "Expo Milano 2015," etc.		
D"Clabelization of language Feed" in guarante markets (Made DV Japan)	numan resources, utilize the Japan Brand Fund, etc.		
Export Japanese agricultural, forestry and fishery products and food produce (Made Formulate a Export Promotion Strategy for eac IN Japan	ch market and each item, create a business environment, utilize an Agriculture, Forestry and forestry and forestry and fishery		
Develop agricultural, forestry and fishery products and food produce that meet			
new needs, utilize functionality, etc.	produce exceeds 1 trillion		
< "AFFrinnovation" (the sixth industry), cross-industrial collaboration, etc. Market size of "AFFrinnovation" (the	sixth industry) 1 trillion yen (2010) => 3 trillion yen (2015) => 10 trillion yen (2020) yen and Japanese		
Full-fledged operations of an Agriculture, Forestry and Fisheries Fund for	• Establish "AFFrinnovation" (the sixth industry) entities through cross-industrial collaboration agriculture, forestry and		
	fishery products establish		
Preinforce collaboration with diverse industries including medicine, food , and agriculture Form industry-government-academia consort Develop a market for high-functional food	Foster medicine-related businesses Create health-related market by development and expansion of food market Substantial presence in		
(Expand exchange between cities and rural areas in coordination with welfare,	e, forestry,		
Grownlate strategy for each product	t Promote creation of agricultural and livestock products with "advantage" such as		
Develop and disseminate new varieties and new technologies and protect and use intellectual properties actively	easures against quality and brand		
Expand use of domestic agriculture, forestry and fishery products and thorougb	areas Depen understanding of consumers for agriculture, forestry and fishery		
	 Co-existence and interaction of urban areas and rural areas by utilizing regional resources 		
Promote industrialization utilizing biomass and introduction	of energy and Healthy development of agriculture, forestry, and fisheries and introduction and		
introduce small hydroelectric generation facilities, etc.	utilization of harmonious renewable energy in rural areas		
Deprove utilization of scientific and technological innovation forestry and fishery industries	Expand and develop markets related to agriculture, forestry and fishery industries Cross-industrial collaboration		
□Advancing agriculture, forestry and fishery technologies utilizing genome informati	ion, etc., develop		
and fishery products and advancement etc. of production	Dusinesses utilizing		
and distribution systems DSupport production and distribution systems of agriculture, lotes by and	agriculture, intestity and		
< Forestry and fishery industries >	fisheries products expanded in many areas with total		
Dake forestry the growth industry by creating new	s with Secrete new demand for wood products, establish a stable and efficient system to		
demand for wood products. wood, etc. building wood distribution system, management and conservation of fores	supply domestic wood yen		
Make fishery industry the growth industry by expanding Develop and sell products meeting consumer needs, handle HACCP, create a system t issue sanitary certificates, deploy the latest aquaculture industry, etc.			
consumption, export, etc. of fishery products issue sanitary certificates, deploy the latest aquaculture industry, etc.	aquaculture industries		
	Goal for 2030		
Present	2017 2020 2030		

A society which makes use of potential such as tourism resources to invite many world's tourists to regional communities

