

Section 2

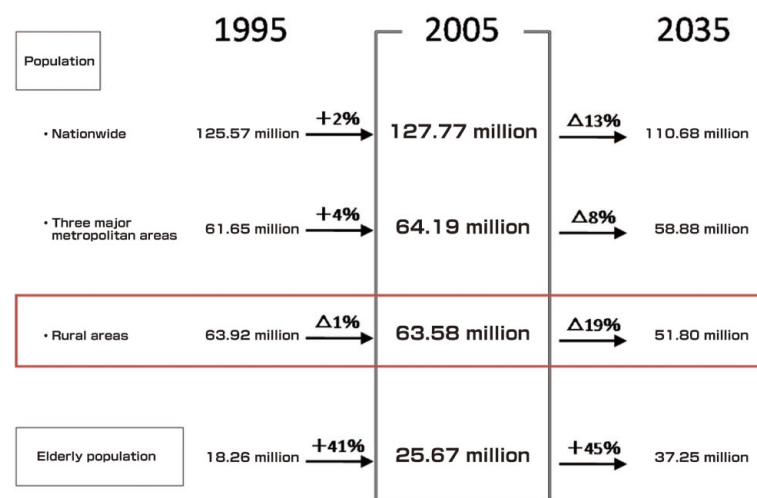
The Road to Local Revitalization via Green ICT

This section will examine the necessity of leveraging Green ICT to revitalize local communities, and give best practice examples of the use of Green ICT in the agriculture, forestry and fisheries sectors.

1. How Green ICT contributes to revitalization of local communities

The total population of Japan is expected to shrink drastically over the next 30 years, with Japan entering an era in which populations decline both in the three major metropolitan areas and outside them. In addition, the ongoing decline of the birthrate could potentially lead to severe depopulation especially outside major metropolitan areas (Figure 2-3).

Figure 2-3 The advent of an age of nationwide population decline and accelerated aging of society



(Source) Compiled from the "Haraguchi Vision"

Particularly when it comes to environmental aspects, Japan is a nation structured so as to sustain and protect its urban areas, in terms of disaster prevention, cultivation of water resources, safe and secure food supply, absorption of carbon dioxide by forests, and so on. For this reason, if rural areas degenerate and their environments are devastated, there is great risk of ensuing damage to the environment not only of urban areas but also of the country as a whole. To avoid such a situation, it is necessary for each rural region to make maximum use of its local resources (rich natural environment, renewable clean energy, safe and plentiful food supply, cultural and historical resources, investors with vision). This can be accomplished through cooperation and joint efforts by residents, local governments, NPOs to construct the necessary frameworks and promote the revival of community ties.

2. Examples of revitalization of local communities through utilization of Green ICT in the agriculture, forestry and fisheries sectors

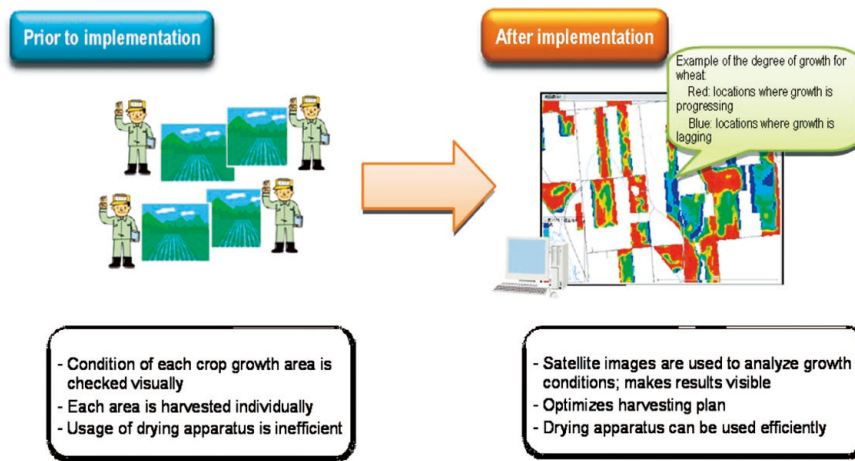
Agriculture, forestry and fisheries are key industries for Japan's rural regions, and require that local resources such as soil, air, water and forests be used with maximum effectiveness. At the same time, recent increases in environmental awareness have led to calls for sustainability. Here we will give an overview of the initiatives of JA Shihoro, which aim not only to reduce CO₂ emissions but also to combine promotion of industry with revitalization of the local community.

Equipment such as large-scale combines and drying facilities are shared in JA Shihoro, meaning that previously farmers had to visit fields in person and check the progress of barley growth (or drying), after which the order of harvesting would be determined based on the progress of growth.

However, a system was introduced in which satellite imaging was used to analyze the growth conditions, and the results of the analysis displayed as a different color for each field (Figure 2-4). Further, the system determines the optimal time of harvest and order in which field should be harvested based on this analysis, achieving reductions in the amount of energy needed to dry crops after the harvest and improvements in the efficiency of harvesting labor.

It is credited with reducing annual CO₂ emissions by 10,090 kg (Figure 2-5), with mitigating the competition and inequality among residents that accompanied the determination of harvesting order, and with fostering a revived sense of community. Reasons this initiative has been successful is that it was developed from the start through unified efforts by all stakeholders (farmers, JA, system development enterprises, and so on), that it was made so that the system's operation reflects the viewpoint of farmers on the front lines, and that ICT technology appropriate to the characteristics of the area was used (in that the vast Tokachi plains are suited to satellite imaging).

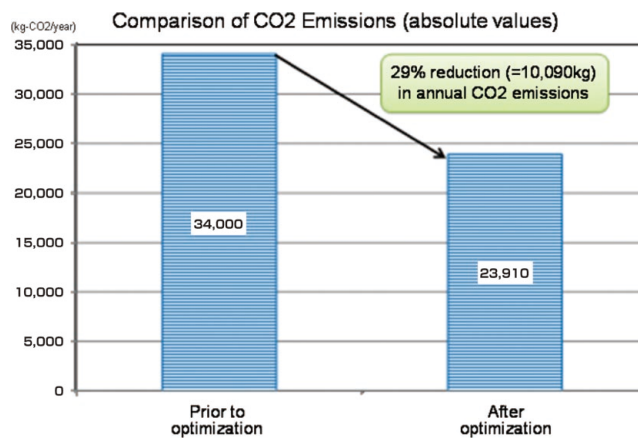
Figure 2-4 Satellite imaging analysis of wheat fields



(Source) Compiled from report on Local Information Portals, Ministry of Internal Affairs and Communications

Figure 2-5 CO₂ emissions reduction through barley harvesting optimization based on satellite imaging analysis

Item	CO ₂ emissions reduction (kg- CO ₂ / year)
Reduction in consumption of energy (fuel)	10,100
Increase in energy consumption due to ICT equipment	-10 (increase)
total	10,090



(Source) Compiled from report on Local Information Portals, Ministry of Internal Affairs and Communications