

Key Issue:

14-Development of Regional Industries

Climate Zone:

Cf: Humid Climate, Temperate Zone

Subjects:

- Environmental Improvement and Sightseeing
Development at Dam site and Surrounding Area



Effects:

- Self-helping and Sustainable Activation of Reservoir Area
- Development of Catchment Area by Participation of Local Communities and Residents
- Contribution to Activation of Reservoir Area by Environmental Improvement

Project Name: Yasaka Dam

Country: Hiroshima and Yamaguchi Prefectures, Japan (Asia)

Implementing Party & Period

- Project: Ministry of Land, Infrastructure and Transport (MLIT)
1990 (Completion of Construction) -

- Good Practice: Ministry of Land, Infrastructure and Transport (MLIT)
1998 (Operation Commenced) -

Key Words:

Communities Activation, Public Participation, Environmental Protection, Regional Vision

Abstract:

At Yasaka Dam site, comprehensive improvement both from hard and soft aspects by participation of local residents is now in progress, for the sake of self-helping, sustainable activation of reservoir area and development of catchment area by association and communication along with environmental conservation, with implementation of “Regional Activation Programme around Yasaka Dam” prepared in association with municipalities and residents at region, in corporation with other executive authorities and public organizations. Consequently, their effort is coming into effect gradually, e.g. increasing of visitors for sightseeing and close association between communities.

1. Outline of the Project

Yasaka Dam is a multi-purpose dam taking a part of comprehensive development plan of Oze River. The dam is located 14 kilometer away from estuary of Oze River, categorized in 1st class river, which runs through the border between Hiroshima and Yamaguchi Prefectures.

The dam project was commenced in 1971 for its feasibility study, in 1982 for its construction, and completed in October 18, 1990 through completion of placing dam concrete in September 1987.

The dam is gravity type concrete dam with its height of 120 meter, having total storage capacity of 112 million m³.

The dam was constructed for the purpose of flood protection, maintaining daily functional flow, supplying drinking water as well as hydropower. (See Table 1 and Fig. 1)

Table 1 Specifications of Yasaka Dam and Reservoir

Item		Specification
Dam	River	Oze River System, Oze River
	Catchment Area	301.0 km ²
	Type	Gravity, Concrete Dam
	Hight	120.0 m
	Crest Length	540.0 m
	Volume	1,550,000 m ³
Reservoir	Impoundment Area	3.6 km ²
	Total Capacity	112,000,000 m ³
	Usable Capacity	106,000,000 m ³
	Sediment Storage	6,000,000 m ³
	Flood Storage	58,000,000 m ³
	Service Water Capacity	48,000,000 m ³
Power Plant	Max Output	7,000 kW
	Discharge	10.00 m ³ /sec
	Effective Head	85.20 m

2. Features of the Project Area

2.1 Natural environment

Oze River, in which the Yasaka Dam is located, is categorized in first-class river but relative small-scale river with its catchment area of 342 km² and length of 59 km, having its riverhead at mountain area with a altitude of around 1,000 m at the western part of Cyugoku mountainous region, and run through border between Hiroshima and Yamaguchi prefectures, then discharge into the inland sea of Japan .

Climate at dam site falls into “Mild Mid Latitude Humid Subtropical (Cfa)”, warm and rainy throughout a year, with annual precipitation between 1,500mm and 2,000 mm.

There are a number of mountains and ravines adding beauty to natural scenery around the dam site. In village



Fig. 1 Location map of Yasaka Dam

areas, classic style houses, shelf-like small rice fields and groves make beautiful rural scenery. In particular, Yasaka Dam, one of largest dams in western Japan, and its reservoir make noble waterside scenery.

The reservoir and surrounding streams, which provide environmentally ideal habitat for many species, have become an important center of local ecology. On the other hand, water quality in the reservoir began to show the sign of deterioration, i.e. eutrophication in recent years. Countermeasure against sources of pollution within surrounding river basins will be essential for remedy of water quality in the reservoir, in particular proper treatment for living sewage will be urgently required as a large part of living sewage is being discharged without any treatment at present, relying on natural purification.

2.2 Social environment

Yasaka Dam is surrounded by two cities and two towns, namely Iwakuni (population of 110,000), Otake (32,000), Waki (7000) and Miwa (5000) as shown on Fig 2. Yasaka Dam area enjoys suburban environment, about one hour drive from Hiroshima (population of 1,110,000). Some housing developments were advanced for the people to commute to Hiroshima, but it did not come up with inducement to people to come back. From socio-economic perspective, the surroundings are areas for agriculture and forestry, and young generation tends to move out to urban areas. It is a typical suburban area having annoyance of population decrease and aging. Though many agricultural promotion measures, including exploitation of local products peculiar to the area have been implemented up to now, it is not satisfactory succeeded yet. More than half the farmhouses have side jobs and they are aged without successor .

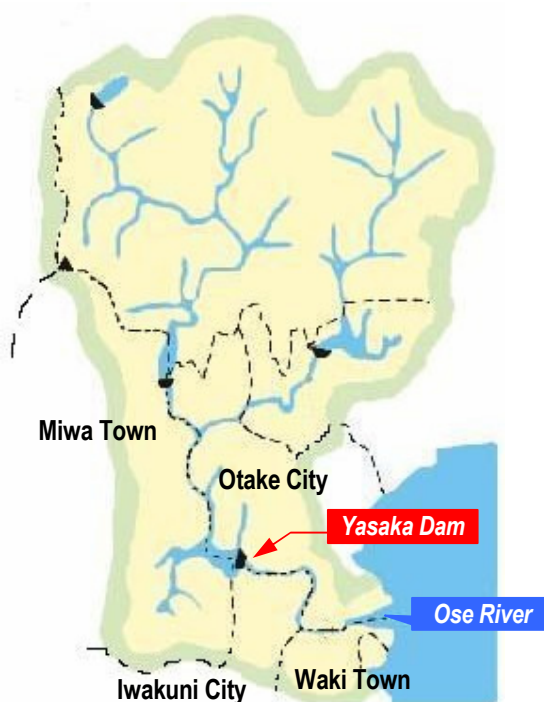


Fig. 2 Yasaka dam and Surrounding

2.3 Potential Chance to Exploit the Dam Site Further

Various facilities, such as camping field, mini-golf course and so on were constructed to enhance attraction of parks near to the dam and reservoir during the construction of Yasaka Dam, as a part of countermeasures for local communities and residents who were affected by the impoundment. Now these facilities are operated and maintained by a third sector in which local residents are involed. Furthermore, with participation of surrounding four cities and towns, many events including cherry planting along waterside of the reservoir, sports festivals and so on were taken place in order to promote the dam and reservoir sites as turist spots.

However, Strategic activation measures have not come up till 1998 except occational measures like small-scale outdoor facilities and recreation events for turists, though there are a lot of advantageous conditions to facilitate turist attraction and association among local communities around dam site by utilization of beautiful natural environment and favorable location close to urban districts. There is a

potential chance to meet the local residents' expectation, i.e. to proceed both environmental conservation and activation of their communities with dam, reservoir and surroundings.

3. Benefits

In such circumstances, “Regional Activation Programme around Yasaka Dam (RAP)” was established in October 1998, which mainly specify the improvement of infrastructures in order to proceed a comprehensive regional development at Yasaka Dam and surroundings. Thereafter, having announcement of “Recommendation for comprehensive development around dam and reservoir – Vision for dam, reservoir and surroundings in 21st century” by Ministry of Land Infrastructure and Transport (MLIT) in September 1999, “Regional Activation Promotion Programme around Yasaka Dam (RAPP)” which added soft measures on previous programme, RAP, has been prepared in July 2002 as “Vision on Regional Development around Yasaka Dam (RAV) ” (refer to Fig 3). Four major themes composing RAPP are described hereinafter.

3.1 Improvements and Expansion of Infrastructures

On the basis of results of development projects for infrastructures carried out under RAP, short and long term plans were reviewed from time to time. Individual facilities like many malls around the dam and reservoir were tried to integrate into functional network to enhance the effort. It has been a great use of shifting the local residents' interest from individual matter to whole of activation programmes.

Specifically, subject area was divided into three zones according to their characters, and improvement of infrastructures are carried out to suit theme of each zone. (Fig. 4) A series of workshops have been held to discuss the way of activation with local residents in advance to commence the actual works. Business transfer to the third sector, mainly involved by local government, has been implemented for operation and maintenance of individual profitable facilities,

3.2 Soft Programmes for Water Environment Conservation

Aiming at many-sided function of local industries and land utilization on forests, fields and rivers, encouragement of local talents for water environment conservation such as environmental volunteer and attendants (facilitator¹ and monitor) has been made to utilize these. Also encouragement of implementation of “Environmental Conservation Ordinance” has been made to facilitate better environmental management within the river basin as a whole.

Specifically, a map to hand out to visitors to the dam site has been produced by a liaison committee comprised of a number of groups who use the dam and reservoir. A questionnaire survey about publicity of development scheme and willing to participate in scheme was carried out, the result of survey has been used as a basis of “People's Network”, a list of active volunteers within the communities of Yasaka Dam (two cities and four town). A number of events including symposia and workshops were held toward the establishment of a management organization representing the communities.

¹So called “Facilitator” here means a moderator at Workshop, and has important role for drawing out various opinions from participants.

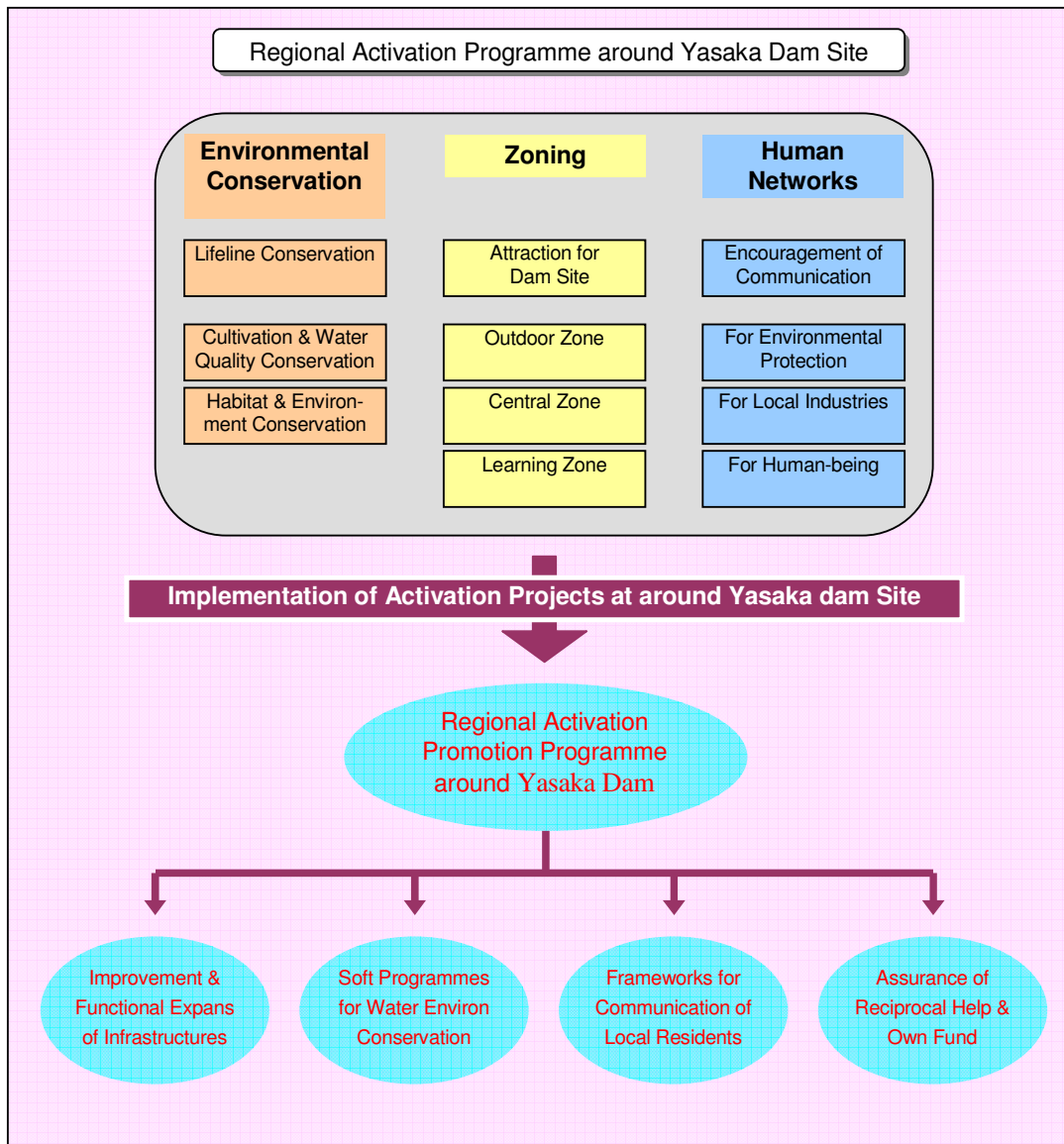


Fig. 3 Relationship between
Regional Activation Programme around Yasaka Dam and
Promotion Programme

3.3 Framework of Community by Diverse People

Utilizing geographical advantage of Yasaka Dam locating close to urban districts, close association with every communities, like upstream and downstream, east and west, shall be developed on the basis of benefits derived from environment-friendly utilization of Yasaka Dam and its water resource. Highly come up association shall be developed through inviting diverse people having common policy about environmental conservation around the dam and reservoir, undertaking to root and expand various events for regional association, introducing environmental technologies which are characteristic to the region, and regional activities.

As concrete example, sports festivals developed on the reservoir and along the shoreline, stamp rally in association with upstream and downstream, open house of dam on festival, etc. are meeting a favorable reception. Publication of brochure showing measures against domestic sewage, holding symposia in collaboration with a number of diverse groups and NPO are also implemented.

3.4 Reciprocal Help and Secure of Own Fund

For lively community activities including environmental conservation, keen awareness about reciprocal help and value that support these activities shall be enlightened and also current institution shall be improved. Building up formation for local residents' participation in activities shall be considered, including possibility to assign them a part of public role, allowing for establishment of new NPOs. A new system of subsidy from public fund and assignment shall be considered.

Specifically, an application for grant to “the River Environment Management Foundation (REMF)”, introductive experiment on a local currency “Maron”, which was implemented in Miwa Town as a subsidized project from the Ministry of Agriculture, Forestry and Fisheries (MAFF), etc. are mentioned.

4. Effects of the Benefits

As a product of this “Vision”, Regional activations have been steadily implemented. Concerning the third sector in Miwa town, annual turnover increased one and half times, and visitors to their facilities increased about double since commencement of the programme. Transition of visitors to their facilities around Yasaka Dam from 1990 to 2002 is shown in Fig. 5. Constructions of many facilities as a part of improvement of infrastructure were completed in 2000 as shown in Table 2. For example, “Maron’s Village Community House (MVCH) ²” in Otake city, which was constructed in cooperation with MAFF, was also opened in 2000, and it resulted in the sharp increase of visitors. As described above, performance of visitor recreation facilities around Yasaka Dam has been expanded at a burst by improvement of infrastructures, which made a large contribution toward the regional activation around Yasaka Dam.

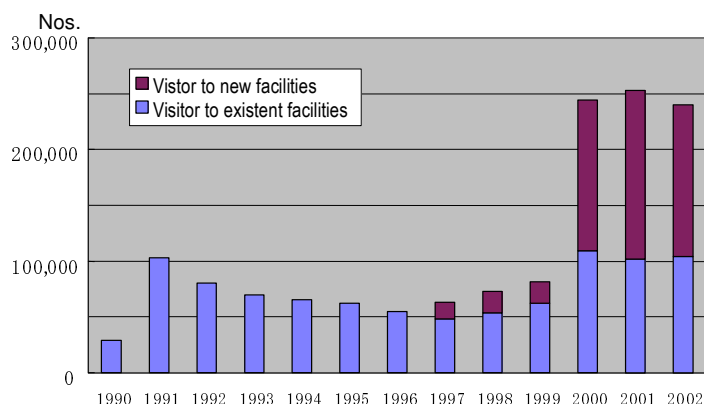


Fig. 5 Nos. of visitors to facilities around Yasaka Dam

² MVCH has facilities for implementing various events, cooking laboratory for farm products, restaurant which serves fresh farm products and direct sales of local products folkcrafts.

Table 2 Project Facilities Construction Completed by 2000

Facility	Year of Completion
Improvement of mall (Auto Camping Yard)	August 2000
Yuritani Waterside (Flower) Park	July 2000
Staging on Reservoir Water	May 2000
Floating Pier	February 1999
Central Facility (Renewal)	May 1999
Maron's Village Community House (MVCH)	May 2000
View and Rest Facility beside Yasaka Dam	June 2000

5. Reasons for Success

Though a number of Regional Development Visions around Riverheads are now got down to implement in nationwide, actual works for improvement of infrastructures are very slow because of financial difficulties in local autonomous bodies. Accordingly, new plans which centers on exchange between two regions, i.e. downstream area as beneficiary from dam function and Riverhead area have been being made in many cases. The establishment of project organization to implement such plans would be quite difficult in these cases. However, soft measures only are deadly luck of reality at very early stages to call for people's participation and consultation with local authorities.

At Yasaka, a council was established with four cities and towns (Iwakuni, Otake, Miwa and Waki) as concerned districts and Yasaka Dam management office since completion of dam construction to discuss the plan of events and festivals. It made up a good teamwork between local administrations and dam management office, and friendly atmosphere to exchange opinions and information about request of local communities and new scheme for activation of dam.

In such circumstances, "Regional Activation Programme around Yasaka Dam (RAP)" which centered on improvement of infrastructures has been launched on as joint project with MAFF, which raised local residents' willing to participate in. Actual works on site were commenced all at once. Continuity of project implementations like renewal of various facilities, rental business of bus-boat, etc. which people can see the progress of works, would be impressive appeal to the local residents.

The followings will be considered to have contributed to the success at the stage of project implementations.

- 1) to have urged the participation of local communities and residents through giving a series of workshops,
- 2) to have got the cooperation of local residents through making clear demonstration concerning the principle of public aid toward local responsibility of management and maintenance of facilities,
- 3) to have enhanced the interest of local residents through the disclosure of information with public relations, periodical issuance of news bulletins, etc.,
- 4) to have coordinated project implementations to be carried out by different ministries, MAFF and MLIT, by means of close liaison among MAFF, MLIT and local authorities.

6. Outside Comments

“Yomiuri Shinnbun” daily newspaper (1997.9.4)

Both MAFF and MLIT will launch jointly the activation for rural district around Yasaka Dam at upstream of Oze River running through the border between Yamaguchi and Hiroshima Pref. The first attempt in nationwide to work together for dam projects.

7. Further Information

7.1 References

- 1) A pamphlet “Vision on Regional Development around Yasaka Dam” by the Promotion Committee for Regional Activation Programme around Yasaka Dam
- 2) “Regional Activation Programme around Yasaka Dam” **Error! Not a valid link.**Environmentally sound village, Yasaka Dam, with illustrious agriculture, July. 2002”
- 3) “Regional Activation Promotion Programme around Yasaka Dam” by the Promotion Committee for Regional Activation Programme around Yasaka Dam,
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- 4) Home page of Yasaka Dam control office, Chugoku Regional Development Bureau, Ministry of Land Infrastructure and Transport (MLIT)
<http://www.cgr.mlit.go.jp/yasaka/>
- 5) Ikuo Toyoda, “Yasaka Dam Project and Regional Development by Otake city”, Dam in Japan (No.559)
- 6) Hiroyuki Yamaguchi, “Outline of Yasaka Dam Project”, Mechanization of Construction (October 1982)
- 7) Home page of Otake city: <http://ww2.enjoy.ne.jp/%7Eotake-city/index.html>

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