Internal Ex-Post Evaluation for Development Planning Project

conducted by Zimbabwe Office: March, 2023

Country Name	**The Development of a Geospatial Information Database Project**
Republic of Zimbabwe	

I. Project Outline

Background	The population of the capital city, Harare, was estimated to grow rapidly from about 658,000 in 1982 to about 1.6 million in 2012. However, the rapid population growth was accompanied by inadequate urban infrastructure development. As a result, dysfunctional infrastructure brought about traffic congestion, environmental pollution, and shortage of public services. Under those circumstances, there was a need for the development of 1:5,000 topographic maps and the establishment of a geospatial information database, which were necessary for infrastructure development and urban planning aiming at improving public health. However, the existing topographic maps in Zimbabwe were not in line with the situation because the latest topographic maps were 1/50,000 and 1/250,000 (1/5,000 and 1/2,500 in some urban areas) maps prepared by Department of the Surveyor General of the Ministry of Lands and Rural Resettlement 30 years ago.		
Objectives of the Project	The project aims at developing 1:5,000 digital topographic maps (about 96 km^2) and digital orthophotos (about 1,700 km^2) and by strengthening the capacity of the Department of the Surveyor General for digital topographic mapping, thereby contributing to the planning, development, and maintenance of infrastructure in Harare, the capital city of Zimbabwe and its surrounding areas. 1. Expected Goals through the proposed plan[1]: (1) Water supply and sewerage and public hygiene services are developed, and the living environment is improved in Harare and its surrounding areas. (2) Infrastructure development is carried out in Harare and its surrounding areas, and economic development is achieved.		
Activities of the Project	1. Project site: Harare and its surrounding areas 2. Main activities: Taking of aerial photographs, ground control point survey, aerial triangulation, preparation of digital orthophotos, preparation of Harare street map, structurization of digital data, training of DGS staff on preparation of digital orthophotos, etc. 3. Inputs (to carry out above activities) Japanese Side 1) Mission members: 12 persons 2) Trainees received: 4 persons 3) Equipment: Levelling equipment, handheld GPS, digital camera, PC, GIS software, digital photogrammetry workstation, CAD software, etc. Zimbabwe Side 1) Staff allocated: 5 persons		
Project Period	(ex-ante) May 2015 to April 2017 (actual) June 2015 to June 2017	Project Cost	(ex-ante) 337 million yen, (actual) 381 million yen
Implementing Agency	Department of the Surveyor General, Ministry of Lands and Rural Resettlement		
Cooperation Agency in Japan	Asia Air Survey Co., Ltd., PASCO Corporation.		

II. Result of the Evaluation

1 Relevance/Coherence

[Relevance]

<Consistency with the Development Policy of Zimbabwe at the Time of Ex-Ante Evaluation >

The "Medium Term Plan" (2010-2015) focused on the development of environments that promotes economic growth in urban areas, in which the development of sustainable infrastructure, water supply and sewerage, and sanitation services have been identified as priority areas. The project was consistent with the development policy of Zimbabwe at the time of ex-ante evaluation.

<Consistency with the Development Needs of Zimbabwe at the Time of Ex-Ante Evaluation >

The topographic maps developed 30 years ago in the country had not been updated, and thus there was a need for the development of 1:5,000 topographic maps and the establishment of a geospatial information database for the development of infrastructure and urban planning. The project was consistent with the development needs of Zimbabwe at the time of ex-ante evaluation.

<Appropriateness of Project Design/Approach>

The project design/approach was appropriate. No problem attributed to the project design/approach was confirmed.

<Evaluation Result>

In light of the above, the relevance of the project is ③ (④ : very high, ③ : high, ② : moderately low, ① : low. *To be the same afterwards.).

[Coherence]

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

One of the priority areas for the assistance for Zimbabwe was the one that would contribute to human security[2]. The related supports included the efforts to improve access to safe water and sanitation, in order to restore living standards that have deteriorated due to economic turmoil since 2000. The project was consistent with the Japan's ODA policy to Zimbabwe at the time of ex-post evaluation.

<Collaboration/Coordination with other JICA's interventions>

Any collaboration/coordination between the project and other JICA's intervention was not clearly planned at the time of ex-ante

[1] The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

[2] Ministry of Foreign Affairs ODA Databook (2015).

evaluation.
<Cooperation with other institutions/Coordination with international framework>
Any cooperation/coordination with other institutions or donors was not clearly planned at the time of ex-ante evaluation.
<Evaluation Result>
In light of the above, the coherence of the project is ②.

[Evaluation Result of Relevance/Coherence]
In the light above, the relevance/coherence of the project is ③.

2 Effectiveness/Impact

<Status of Achievement for the Objectives at the Time of Project Completion>
All of the outputs were produced by the time of project completion. Digital topographic maps (mapping area: 96 km^2, 12 sheets) and digital orthophoto maps with contour lines (mapping area: 1,700 km2, 2,228 sheets) were developed as planned. Also, new digital aerial photos with high ground resolution were taken. For capacity development of DSG, technical transfer was conducted in the fields of aerial photography, ground control point survey, aerial triangulation, field identification and field completion, digital plotting and digital compilation, digital orthophoto preparation, map representation, preparation of provided data and promotion of utilization of geospatial datasets, and technical support to the data users.
< Utilization Status of the Proposed Plan at the Time of Ex-post Evaluation>
The proposed plan has been partially utilized by the time of ex-post evaluation. The developed digital topographic maps have been officially approved by the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development in July 2017. Also, the developed digital topographic maps and digital orthophoto maps with contour lines have been sold and distributed by DSG. For promotion of the maps, DSG has introduced the products in the Zimbabwe International Trade Fair in 2022, Zimbabwe Agricultural Show in 2019, and Provincial Agricultural Show in 2019. No exact data of the use of the products were available (Indicators 1 and 2), because DSG has not managed the data, but several examples were confirmed in the ex-post evaluation, such as the use by the Municipality of Harare and the Environmental Management Agency.
<Status of Achievement for Expected Goals through the Proposed Plan at the Time of Ex-post Evaluation>
The expected goals through the proposed plan have been partially achieved at the time of ex-post evaluation. According to DSG, the water utility facility has been mapped based on the project outputs. This has made it easier to search for an alternative water facility when water pipes burst. Also, because of the water facility mapping, repairs have been conducted more speedily than before. On the other hand, no information related to the improvement of the livelihood due to sewerage and public hygiene services has been confirmed.
<Other Impacts at the Time of Ex-post Evaluation>
As explained above, due to the easier finding of alternative water facilities, women's burden has been reduced because it had been their roles. No negative impact on the environment has been confirmed.
<Evaluation Result>
In light of the above, the effectiveness/impact of the project is ②.

Status of Achievement of Utilization Status of the Proposed Plan and Expected Goals through the Proposed Plan

Aim	Indicators	Results	Source
(Utilization Status of the Proposed Plan) (1) DSG's capability for topographic mapping is improved, and digital topographic maps are produced from digital orthophotos. (2) Digital topographic maps are used for efficient water supply, sewerage, sanitation services and infrastructure development and maintenance.	1. Number of development plans prepared with the digital topographic maps	Status of Utilization: Partially utilized. (Ex-post Evaluation) ● The number of development plans prepared with the digital topographic maps were not available from DSG. DSG has not tracked the record of development plans that are prepared with the maps. ● However, it was confirmed that at least the Environmental Management Agency formulated the wetlands Master plan using the street map prepared by DSG.	DSG.
	2. Number of projects related to infrastructure development implemented with the digital topographic maps	Status of Utilization: Partially utilized. (Ex-post Evaluation) ● The number of development projects prepared with the digital topographic maps were not available from DSG. DSG has not tracked the record of development projects that are prepared with the maps. ● However, it was confirmed that at least the Municipality of Harare has used the maps for the water and sanitation infrastructure development and management. Also, the Civil Protection Department under the Ministry of Local Government, Public Works and National Housing has planned to use the maps for hazard mapping.	DSG.
(Expected Goals through the Proposed Plan) (1) Water supply and sewerage and public hygiene services are developed, and the living environment is improved in Harare and its surrounding areas. (2) Infrastructure development is carried out in Harare and its surrounding areas, and	1. The living environment is improved in Harare and its surrounding areas through developed water supply and sewerage and public hygiene services.	Status of Achievement: Partially achieved. (Ex-post Evaluation) ● Based on the project outputs, the water utility facility has been mapped. Even when the water pipes burst, it has become easy to find alternative water utility facility.	DSG.
	2. Infrastructure development is carried out in Harare and its surrounding areas.	Status of Achievement: Not achieved. (Ex-post Evaluation) ● Infrastructure development has not been carried out yet, however, the Environmental Management Agency formulated the Wetlands Master Plan from the street maps developed by	DSG.

economic development is achieved.		DCG and the Civil Protection Department has planned to use it for hazard mapping.	

3 Efficiency

Both the project cost and the project period slightly exceeded the plan (the ratio against the plan: 113% and 104%, respectively). The project period exceeded very slightly, presumably because one month was extended for finalization of the final report. Outputs were produced as planned.

In the light above, the efficiency of the project is ③.

4 Sustainability

<Policy Aspect>

The Copyright Act (2004) has secured DSG's access to the geospatial information of the National Mapping Authority.

< Institutional/Organizational Aspect>

The organizational structure of DSG has been sustained since the time of project completion. However, the number of staff to promote the use of digital topographic maps has not been sufficient because DSG has not had a marketing division. On the other hand, it has participated in national and international events such as trade fairs to bring awareness to clients and other stakeholders about its available data and information.

<Technical Aspect>

DSG answered that its staff have sustained necessary skills for promoting digital topographic maps including: 1) aerial photography, 2) ground control points survey, 3) aerial triangulation, 4) field identification and field completion and 5) map representation and map finishing. The skills of structurization of digital data" was expected to be taught, the technology transfer was not carried out sufficiently during the project period because of time constraints. DSG has sustained and practiced the knowledge for updating the digital maps, supported by the follow-up project, "Promoting Geospatial Data Utilization Including Data Update by Science, Technology and Innovation" (2021-2022). On the other hand, the manuals developed by the project have been available but not in much use because they have not supported the updated software.

<Financial Aspect>

DSG has not continuously secured a specific budget for promotion purposes since it has not had the marketing division, but it has participated in aforementioned trade fairs for the promotion purpose. DSG has got profits from selling digital maps. The profit data were not available, but it could be presumed that there has definitely been an increase in sales because the maps have been usually sold out once they were produced.

<Environmental and Social Aspect>

No issue on environmental and social aspect by the utilization of the developed digital topographic maps has been observed and it has not been necessary to take any countermeasures.

<Evaluation Result>

In light of the above, some problems have been observed in terms of the institutional/organizational, technical and financial aspects of the implementing agency. Therefore, the sustainability of the project effects is ②.

5 Summary of the Evaluation

The project prepared the digital topographic maps and digital orthophoto maps with contour lines. After the project completion, the developed maps have been mostly utilized as planned. The maps have been sold and distributed, and they have been utilized by the government agencies for developing the plan and infrastructure. Regarding sustainability, a section and staff specializing in marketing have been needed for further promotion of the digital maps. As for the project efficiency, both the project cost and period slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- It is recommended to DSG to assign a staff member specialized in marketing or train the existing staff on marketing for further promotion of digital topographic maps, while it does not have an independent marketing section. In the long term, it is recommended to establish a marketing department and allocate necessary budget and assign staff specialized in marketing to that department.

Lessons Learned for JICA:

- In the ex-post evaluation, the indicators set for verifying the utilization status of the developed maps were not available because DSG has not tracked the data. DSG has not had the mandate to follow the utilization result of the maps after it sells them. To evaluate the continuation of the effects and impacts of the project, the data monitoring is indispensable, and otherwise even good result could be overlooked. When the project is concluded, it is necessary to clarify the monitoring data, data collection method, and monitoring roles of the implementing agency, and get agreement in writing.