Twinning Project Fiche

Reduce Discrepancies between the Physical Reality and the Graphical Cadastral Information in Jordan for the Department of Lands and Survey

(JO14/ENP/JH/26)

ABBREVIATIONS

BC : Beneficiary Country

CIS : Cadastral Information System

DLS : Department of Lands and Survey

EU : European Union

GIS : Geographical Information System

GTZ : German Agency for Technical cooperation

IT : Information Technology

JDCDB : Jordan Digital Cadastral Data Base

JTM : Jordan Transverse Mercator

LRD : Land Registration Directorate

MS : Member state

PSC : Project Steering Committee

RTA : Resident Twinning Adviser

RT K : Real Time Kinematic

1. Basic Information

1.1 Program: Support to the Implementation of the Action Plan Program (SAPP-III)

1.2 Twinning Number: (JO14/ENP/JH/26)

1.3 Title: Reduce Discrepancies between the Physical Reality and the Graphical Cadastral Information

1.4 Sector: Urban Development

1.5 Beneficiary country: The Hashemite Kingdom of Jordan.

2. Objectives

2.1 Overall Objective(s):

The development of a sustainable land management system in Jordan based on the Geographical Cadastral Information.

2.2 Project purpose:

The specific purpose of this project is to enhance the technical and administrative capacities of the Department of Lands and Survey in the field of cadastre and land administration in order to provide complete, accurate compared with reality, and up to date information and data.

2.3 Contribution to National Development Plan/Cooperation agreement/Association Agreement/Action Plan

2.3.1 Contribution to the National Development Plan

The Department of Lands and Survey (DLS) is working towards support the implementation of the Kulun al Urdun/**National Agenda**, and it's Strategic Plan (2007-2017); the latter contributes to achieving some of the objectives of three major pillars of the National Agenda, which are investment development, social welfare, infrastructure upgrade and financial services and fiscal reforms.

Consequently, a major contribution in achieving these goals and objectives is to have a solid land administration system based on an accurate and verified cadastral system, which can be considered as an effective tool in any land market by providing essential and fundamental data for any infrastructural activities or projects in Jordan. Accordingly, this can only be achieved by enhancing the technical and administrative capacities of the institution itself as well as for the people generating and providing this type of data and information.

2.3.2 Contribution to EU-Jordan Association Agreement and the Action Plan

The highlighted priorities of the AP are:

– Pursue the consolidation of the institutions safeguarding democracy and the rule of law;

– Continue to ensure the respect of human rights and fundamental freedoms in line with International standards and promoting the implementation of international human rights standards;

– Further enhance the independence and impartiality of the judiciary and its administrative capacity;

– Pursue ensuring freedom of expression and media, assembly, and association;

– Further promote equal treatment of women and protection of children;

– Reinforce the EU-Jordan political dialogue and cooperation on foreign and security policy in a range of areas including the Middle East Peace Process, non proliferation, and disarmament;

– Deepening of economic and trade relations via a progressive liberalisation in services and the right of establishment, promotion and increase of investments, facilitation of market access and improvement of business climate;

In November 2008, Jordan requested for advancing relations with the EU, with the aim of bringing Jordan closer to the EU by reinforcing the current Partnership and creating new avenues of cooperation in areas of mutual interest. The request was officially submitted to the Seventh Association Committee meeting held in Brussels in June 2009, which included the Government's views on how to enhance bilateral relations in the political, economic, trade, and social spheres, as well as deepen cooperation in key sectors such as energy, water, transport, agriculture, and science and technology. The EU approved Jordan's advanced status Action Plan in November 2010.

One of the priorities for action stated in the EU-Jordan action plan is to take measures to improve the establishment and operation of companies and co-operate to facilitate foreign investment (Art. 35)

With the tremendous increase of the land prices in Jordan; the need for accurate, up to date, and precise land information has become increasingly important for the operation of both public and private entities. In many cases; the discrepancy between the reality on the ground and the data registered has negatively influenced the investment decisions and land utilisation. This twinning project is expected to address these issues by building onto the results achieved by the previous twinning through a higher degree of convergence between the physical reality and the graphical cadastral information (see section 3.1 for more information).

3. Description

3.1 Background and justification:

The Department of Lands and Survey (DLS) was established in 1927. In addition to the management of the treasury lands, the DLS handles two main tasks; Cadastral surveying, and registration of land property. The DLS has computerized all its land registers and cadastral maps and provide most of its services on line. Moreover, an e-government project is being implemented with the support of the Ministry of Telecommunication and Information Technology aiming at expanding the e-services provided by DLS. The Jordanian cadastre is a legal cadastre which means that the legal status of the ownership is reflected and guaranteed by the register record.

The Department of Lands and Survey plays two vital roles in preserving land property rights and solving any conflicts, in respect to; the right in land or water and representing Jordan's land information bank. Moreover, the duties and tasks assigned to DLS by-law are to complete and maintain the cadastral system in Jordan (the cadastral maps and the registration records), fixing the borders of the plots (parcels), settling (solving) disputes on land and issuing cadastral maps, establishing of a comprehensive land valuation system, and maintaining its records for the purposes of registration transactions. This Twinning Project will support DLS efforts to achieve and implement its mandate.

The number of services and transactions are constantly increasing (an average of one million different transactions annually) and in recent years the value of land has increased dramatically. Therefore DLS is obliged to improve the level of credibility of its data and services by eliminating all kinds of inaccuracy (data, reality), and unify the geo-referencing system, complete the cadastral information by representing the buildings information, re-engineering and simplifying cadastral procedures, capacity building and institutional co-operation with the main stakeholders[1].

Also, in 2011-2013 DLS implemented a 21 months Twinning project, which included three components; integrated cadastral system, secured digital registers and maps and accurate land valuation methods according to the best international practices. This twinning ended last year and all the results were achieved.

3.2 Linked activities (closed projects)

1. Maps Digitization Project

A 5 years conversion project started in 1996 and ended in 2000. DLS two-dimensional maps are based on a geodetic network, which has a low relative accuracy. This network is computed in Cassini-Soldner projection, which is not a conformal projection. The total number of points inside this network is around 42000, and the total number of maps drawn using this network is around 20000.

[1] Ministry of Finance, Ministry of Interior, Ministry of Justice, Ministry of Municipal Affairs, Ministry of Public Work and Housing, Ministry of Transport, Ministry of Agriculture, Ministry of Energy and Mineral Resource, Ministry of Environment, Greater Amman Municipality, Petra region Commission, Housing and Urban Development Corporation, Jordan Valley Authority, The Royal Jordanian Geographic Center, Aqaba Special Economic Zone Authority, Housing and Urban Development Corporation.

The project successfully achieved the conversion of all hard copy maps into digital form by the mean of scanning and vectorization and nowadays all of DLS maps are in digital form.

2. Maps Edge Matching Project

A 7 years digital edging project started in 1997 and ended in 2003. The process of converting paper maps into digital ones highlighted the problem of non-matched edges and the low accuracy of the maps. The edges of the neighbouring maps were not identical and the difference between these edges reached more than 4m for maps at 1/2500 scale in urban areas, which is far below the graphical accuracy.

The main achievement of the project was that most of the cadastral digital maps are edge matched.

3. Un-surveyed Areas Project

A 4 years un-surveyed areas project started in 1999 and ended in 2002. The project came to deal with the increasing demand on information about the un-surveyed areas for different reasons; leasing, mineral concession, tribal claims. Moreover, it is worth mentioning that the maps within the project were issued in Jordan Transverse Mercator (JTM) projection and the fieldwork was carried out using the National Geodetic Network (in the same projection). Jordan Transverse Mercator projection uses as a geodetic datum the International Hayford Ellipsoid. The projection is with 6° zones, central meridian of 37° and scale factor in the central meridian of 0.9998.

The project assists DLS to accomplish surveying and registering the rest of the country.

4. DLS-GTZ (the German Agency for Technical Cooperation) Technical Cooperation Project (Modernization Project) (1996 – 2004):

This project started in 1996 with the project purpose: "Geo-referenced information on land is improved in quality and reliability; available to potential users through mutual agreements". The project's main results and outputs were: Valuation system is established and implemented in pilot Land Registry Offices, all products and their real costs are defined and considered in DLS budget issues, strategic planning is introduced and followed up, proper, complete digital cadastre is made available, human resource management and development follows production goals effectively, and external and internal awareness, co-operation and communication are improved

5. Maps Transformation to JTM Datum

Jordan Transverse Mercator projection (JTM) is a geodetic datum which uses the International Hayford as an Ellipsoid. This projection is with 6° zones, central meridian of 37° and scale factor in the central meridian of 0.9998. The National Geodetic Network is highly accurate (Doppler based geodetic network). The original maps of "Building Jordan Digital Cadastral Data Base" (JDCDB) are in Cassini-Soldner projection which is somewhat a nonhomogeneous datum. Therefore transforming all the (21000) maps to JTM fulfils the overall goal of establishing JDCDB. To reach this target extensive fieldwork was carried out between 1998- 2000, 2200 DLS triangulation points (out of 45000) were re-observed in JTM using post process GPS surveying technique, relying on the National Geodetic Network JTM. Once the

transformation parameters were obtained, all 45000 DLS trig points had been transformed to JTM. Furthermore, densification of control points were created using JTM datum directly.

6. Cleaning up JDCDB

In order to improve the quality of the cadastral information and make it user friendly, DLS has embarked on a program to ensure that DLS cadastral maps and land register are in digital form, matched, updated regularly, covering the whole country and available to the users in a proper and agreed on format.
DLS's strategy is aimed at documenting the ownership rights, safeguard them, facilitate the dealing of these rights, and sharing for building the GIS. That is why CIS must be complete, accurate, and easy to retrieve. DLS's quality policy started by implementing sub-projects such as computerization for LRDs and data cleansing. This continuous process means that both the maps and the register must be complete, homogenous and matched, consequently each parcel in JDCDB has a record in the register (Oracle) through common key (DLS_KEY), and all questions concerning where, how much, who, and how should be answered immediately, and amended by means of inspections reports displaying differences between JDCDB and the register.

7. Renewing of cadastre and quality control approach

The problem of low accuracy of the digital cadastral maps due to geodetic network limitations, the high price of land, the expectations of owners to get reliable results, and the conflicts between owners because of contradiction between the physical reality on the ground and its reflection on the JDCDB, all these factors push in the direction of improving the cadastral information and making it available in an easily accessible and user friendly format. At different times during the 70s, 80s and 90s the whole resurveying concept was brought up as sole solution to this problem, but the tremendous work and costs needed to implement this solution made it an unrealistic one.

The alternative that DLS come up with after consulting international experts on this issue (mainly German experts through GTZ) was the concept of partial resurveying. The concept strategy is to renew the cadastral maps gradually by replacing the current coordinates of the boundary points by new accurately observed and computed coordinates using the JTM projection. The gradual replacement of old coordinates with new ones means that every time when a new subdivision of a parcel is under process, a boundary reestablishment must and should precede it. This boundary reestablishment will be carried out using a uniform, precise and homogeneous geodetic network in JTM; by this the result will be a set of new computed boundary points that will automatically replace the old one and by that updating the cadastral map gradually. For that to happen smoothly and without any duplication of work in the future, the cadastral maps must be converted into JTM projection first. It is not necessary to wait for a new subdivision of a parcel in order to renew and update JDCDB; the same procedure can be executed for all areas with big discrepancies. The best way to put clear and exact priorities for areas to be resurveyed by taking into consideration the value, location, density, number of transaction, level of demand on accurate data, etc.

This strategy forms a big challenge to DLS and in order to see its successful implementation it needs to be accepted and explained very clearly to all concerned stakeholders and especially the public and licensed surveyors as main executors.

3.3 Results:

3.3.1 Result one: One geo-referencing system for cadastral information has been implemented: key outputs to result (1) that will be achieved by the end of the project is to unify the geo-referencing system in Jordan, fixing the borders of the plots (parcels), settling (solving) disputes on land and issuing cadastral maps.

3.3.2 Result Two: Building information representation in the cadastre has been improved in a pilot area: key outputs to result (2) that will be achieved by the end of the project is to represent the building information in the cadastre, both the descriptive and graphical data, and to complete the cadastral information and to assure the solid maintaining procedures.

3.3.3 Result Three: Re-engineering and simplification of the cadastral procedures has been implemented and evaluated : key outputs to result (3) that will be achieved by the end of the project is to ensure that the cadastral services procedures are effective and efficient from the point of time, cost and number of steps for achieving the satisfaction of the department customer.

3.3.4 Result Four: Capacity building action plan is improved and implemented : key outputs to result (4) that will be achieved by the end of the project is to develop and implement capacity building action plan to enhance the way of serving the department customers.

3.3.5 Result Five: Institutional co-operation and exchange of information has been agreed upon between the main stakeholders: key outputs to result (5) that will be achieved by the end of the project is to develop and implement an initial joint action plan to increase and enhance the co-operation among the department and its main stakeholders such as other public entities and businesses.

3.4 Activities:

3.4.1 Result One: One geo-referencing system for cadastral information has been implemented:

1. A detailed assessment report for the existing systems set up is prepared and approved.
2. A detailed assessment report for the using tools is prepared and approved.
3. Analysis report including the recommendations is prepared and approved.
4. Executive recommendations tested inside a selected pilot area using two coordination system (Cassini, JTM).
5. Results collected and compared by taking discrepancies in to consideration.
6. According to the results recommended one geo-referencing system cause reducing discrepancies is approved and implemented in the pilot area.
7. Study the possibility to include the approved geo-referencing system within the DLS law .
8. Number of training of trainers program (TOT) to selected trained technical staff, who are in charge of the system, are developed and implemented.

9. Number of study visits to similar institutions in the EU countries to transfer the know-how are carried out during the lifetime of the project.

3.4.2 Result Two: Building information representation in the cadastre has been improved in a pilot area:

1. A detailed assessment report for the situation of the current data base (register & map) for the building schema and methods of capturing and updating building data from the field is prepared and approved.
2. Analysis report for the finding including the recommendations for (field to be added into the data base, detailed specification for building layer and 3D cadastre) is prepared and approved.
3. Suggested methods of capture and update the building data to create the layer according to the best international practices is approved and implemented during the lifetime of the project in a pilot area.
4. A detailed report including the corrective actions of all the problems occurred during the implementation.
5. The implementation of corrective actions is supervised and followed up during the lifetime of the project.
6. Number of training of trainers program are developed and implemented.
7. Number of study visits to similar institutions in the EU countries to transfer the know-how are carried out during the lifetime of the project.

3.4.3 Result Three: Re-engineering and simplification of the cadastral procedures has been implemented and evaluated:

1. A detailed assessment report for the existing situation based on questionnaire made for different stakeholders and participants of the observed process is prepared and approved.
2. To evaluate the cadastral services procedures by identifying factors which are responsible for successful and unsuccessful outcomes.
3. To evaluate the cadastral services procedures efficiency and effectiveness which are measured by times, cost and number of steps for achieving the goal.
4. An analytical report including the required recommendations on simplification of cadastral services' procedure is prepared and approved.
5. The simplified cadastral services' procedure are approved and implemented during the lifetime of the project.
6. A detailed report including the corrective actions of all problems occurred during the implementation is approved and implemented.
7. The implementation of the corrective action is supervised and followed up during the lifetime of the project.
8. Number training of trainers programs is developed and implemented.
9. Number of study visits to similar instructions in the EU countries to transfer the know-how is carried out during the lifetime of the project.

3.4.4 Result Four: Capacity building action plan is improved and implemented:

1. Analysis report for the current needs and user requirements is prepared and approved.
2. Developing business action plan including (As-is & As-to be) based on the results of the analysis of the user requirements and outcome of assessment reports for results(1, 2, 3).
3. Action plan is approved and timely informed of all levels of staff and implemented during the lifetime of the project.
4. An assessment report for implementation including clear recommendation to motivate and award best workers and team and to insure that the action plan is a part of training strategy of the department.
5. Number of study visits to similar institutions in the EU countries to transfer the know-how is carried out during the lifetime of the project.

3.4.5 Result Five: Institutional co-operation and exchange of information has been agreed upon between the main stakeholder:

1. A detailed assessment report for the determine and set the main stakeholders is prepared and approved.
2. Develop an initial joint action plan, which represent a first set of actions and initiatives that will begin the process of developing more closely working taking in consideration (technical, organizational, information standards issues).
3. Action plan is approved and informed of all shared stakeholders and implemented during the lifetime of the project.
4. Number of training courses on the execution of the joint information and transactions through the three concepts of (reciprocity, stability and robustness) is carried out.
5. A detailed report including the corrective actions of all problems occurred during the implementation.
6. The implementation of corrective actions is supervised and followed up during the lifetime of the project.
7. Number of training of trainers program is developed and implemented.
8. Number of study visits to similar institutions in the EU countries to transfer the know-how is carried out during the lifetime of the project.

3.5 Means/ Input from the MS Partner Administration:

3.5.1 Profile and tasks of the Project Leader

3.5.1.1 Profile:

1. High ranking civil servant or equivalent staff with a University Degree in land administration and management or closely related discipline.
2. Professional qualification and knowledge in land administration and cadastre (min. 15 years).
3. Land valuation and GIS knowledge.
4. Land management and spatial planning knowledge is an advantage.
5. Professional practice and skills in project management.
6. Previous experience in similar projects.

7. Good working knowledge of English.

3.5.1.2 Tasks:

1. Overall responsibility for the project falls to the BC & MS project leaders.
2. He/she will be the only official responsible contact person for the Jordanian side.
3. He/she will be the one to sign all official documents.
4. He/she will also co-ordinate the Project Steering Committee (PSC) from the MS side, which will meet every three months at the Department of Lands and Survey.

3.5.2 Profile and tasks of the RTA

3.5.2.1 Profile:

1. High ranking civil servant or equivalent staff.
2. Master Degree in land administration and management or closely related disciplines.
3. Professional qualification and knowledge in geodesy and cadastre (min. 10 years),
4. Land valuation and GIS knowledge,
5. Land management and spatial planning knowledge is an advantage,
6. Professional practice and skills in project management,
7. Research, leadership, and team building skills,
8. Previous experience in similar projects,
9. Strong analytical skills, problem solving and mentoring capabilities,
10. Excellent Communication and Presentation Skills.
11. Excellent written and spoken command of the English language. Arabic language is a plus.

3.5.2.2 Tasks:

1. The Resident Twinning Advisor will take responsibility for the smooth and proficient implementation of the project, while ensuring that the specific objectives and activities outlined are fully achieved.
2. He/she will coordinate closely with all relevant institutions involved in the Department of Lands and Survey as well as with any other relevant stakeholder.
3. He/she will meet with the Jordan Project Leader at least once a week, and hold regular meetings with other counterparts as regularly as possible.
4. The RTA will co-ordinate with the MS Project Leader in ensuring that each input is fulfilled, by ensuring that each Medium and Short-Term Expert (MTE & STE) has detailed Terms of Reference.

3.5.3 Profile and tasks of the short- term experts

3.5.3.1 Profile:

Short-term experts are expected to work in this twinning project with the following qualifications for each of the project results:

For the **first result**: One geo-referencing system for cadastral information has been implemented:

1. Master's Degree in Surveying or Geomatics Engineering or similar.
2. Professional qualification and experience in land administration and geodetic reference systems (min. 10 years).

3. RTK and virtual reference stations installing and operation knowledge.
4. Professional experience in management and information technology (min 8 years),
5. Knowledge of standard implementation and project management methodologies,
6. Strong analytical skills, problem solving and mentoring capabilities,
7. Excellent Communication and Presentation Skills.
8. Excellent written and spoken command of the English language.

For the **second result**: Building information representation in the cadaster has been improved in a pilot area:

1. Master's Degree in Surveying or Geomatics Engineering or similar.
2. Professional qualification and experience in land administration and cadastre (min. 10 years).
3. Professional qualification and experience in GIS systems (min. 10 years).
4. Knowledge of standard implementation and project management methodologies,
5. Strong analytical skills, problem solving and mentoring capabilities,
6. Excellent Communication and Presentation Skills.
7. Excellent written and spoken command of the English language.

For the **third result**: Re-engineering and simplification of the cadastral procedures has been implemented and evaluated:

1. Master's degree and/or equivalent experience in organizational development/management, land administration or related fields.
2. Business process knowledge and experience in business development and issues related with product and service development.
3. Progressive experience in human resources management, customer relations and satisfaction, team building and quality service.
4. Experience in land administration business processes analysis and reengineering.
5. Ability of aligning technology and business to generate cost-effective processes.
6. Ability to identify, understand and propose solutions to cater business change requirements according to worldwide best practices.
7. Skills: Project Planning, Resource And Time Management, Control And Change Management, Analytical Skills.
8. Knowledge of standard implementation and project management methodologies.
9. Strong analytical skills, problem solving and mentoring capabilities.
10. Excellent Communication and Presentation Skills.
11. Excellent written and spoken command of the English language.

For the **fourth result**: Capacity building action plan is improved and implemented:

1. Master's degree and/or equivalent experience in organizational development/management, lands administration or related fields
2. experience in providing capacity building assessments or technical assessments
3. Demonstrated experience in providing Lands administration capacity building assessments to diverse populations
4. Knowledge of standard implementation and project management methodologies,
5. Strong analytical skills, problem solving and mentoring capabilities,
6. Excellent Communication and Presentation Skills.
7. Excellent written and spoken command of the English language.

For the **fifth result**: Institutional co-operation and exchange of information has been agreed upon between the main stakeholder:

1. Master's degree and/or equivalent experience in organizational development/management, lands administration or related fields
2. experience in program coordination
3. Highly skilled in developing reports required for managing internal and external meetings between parties
4. Demonstrated ability to understand the need of assigning relevant responsibilities and monitoring project progress
5. Profound experience in leading teams in order to ensure clear mitigation of risks and issues
6. Knowledge of standard implementation and project management methodologies,
7. Strong analytical skills, problem solving and mentoring capabilities,
8. Excellent Communication and Presentation Skills.
9. Excellent written and spoken command of the English language.

3.5.3.2 Tasks:

The STEs will be responsible for:

- Reviewing the current systems tackled by this twinning project.
- Providing suggestions, recommendations for improvement of current systems.
- Conducting local training courses and workshops according to the detailed log Frame matrix
- Suggesting detailed work plan for the implementation of their recommendations in line with the achievements of the project's mandatory results out lined in the log Frame matrix.

4. Institutional Framework

DLS is one of the oldest institutions in Jordan. Laws regulate all of its work, but only recently the by-law for the administrative organization of DLS (By-law No. (80)/1999) was enacted according to Article 120 of the Constitution. Moreover, DLS maintains records of over 1.65 million parcels, 21000 cadastral maps, and more than 3.5 million ownerships. DLS processes approximately one million different transactions each year and collects around 350 million US dollars annually as revenues. According to the DLS law and by law, DLS receives fees for all the services that it provides (48 compound different services registration and technical) and no property tax as it is between the Municipalities. The fees are the only way of DLS funding.

The duties and tasks of DLS are; the registration of land property rights, maintaining them and facilitating their use, process property related transactions (sales, transfers, partition, debts, mortgages…etc.), determine and collect land transfer taxes and fees, establish a Cadastral Information System as part of the National Information System, organizing and implementing the licensing of the private surveyors, real estate brokers and valour.

DLS has more than 1500 employees. Its jurisdiction extends to cover all geographical areas of Jordan. DLS consists of 12 central directorates (in the head quarter) and 35 land registration directorates distributed all over the kingdom plus 5 registration service offices (see Annex 2- organizational chart). DLS is an affiliate member of the International Federation of Surveyors since 2000.

5. Budget:

EUR 1,000,000.00

6. Implementation Arrangements

6.1 Implementing Agency responsible for tendering, contracting and accounting

The Implementing Agency responsible for tendering, contracting and accounting is the Programme Administration Office (PAO).

The Programme Administration Office (PAO) at the Ministry of Planning and International Cooperation (MoPIC) is responsible for coordination of the preparation of Twinning projects and support for their implementation as well as the provision of advisory and methodological support to public authorities in preparation and implementation of twinning projects. The contact person is:

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6.2 Main counterpart in the BC

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6.3 Contracts:

The project will be implemented in the form of a twinning contract.

7. Implementation Schedule (indicative)

7.1. Launch of call for proposals : 15 November 2014

7.2. Start of project activities : 01 August 2015

7.3. Project Completion: 31 January 2017

7.4. Duration of the execution period (number of months): 18 months

8. Sustainability

The DLS and during the duration of the project will work toward setting up policies and actions to assure the sustainability of the project's achievements and results after the project.

New recommended methods and detailed work plans that are going to be delivered by the project will support this national strategy to assure the sustainability of this project's outcomes in the field of Cadastral capacity building within DLS.

Mutual agreements and memorandum of Understandings with concerned and related institutions will be established and followed up, to assure the continuity and sustainability of the project's results. In addition, DLS will ensure that the results and output of the project will be followed up and embedded in its strategic plan.

9. Crosscutting issues

The directly and main involved directorates of DLS are, the Surveying Services Directorate, the Settlement and Survey Directorate, the registration affairs Directorate, and IT Directorate.

Beneficiaries from the outputs and results of this project are mainly, the Ministry of Municipal Affairs, Ministry of Public Works, Grater Amman Municipality, Jordan Valley Authority, Aqaba Special

Economic Zone Authority, Petra Region Authority, Bankers Association, Investors Association, Ministry of agriculture, Licensed Surveyors Association among others.

Equal opportunity principles and practices in ensuring equitable gender participation in the project will be guaranteed. Male and female participation in the project will be based on the relevant standards of the EU. The main criteria for staff recruitment will be appropriate qualifications and experience is similar projects, not sex or age. Both men and women will have equal opportunities in terms of recruitment and promotion and salaries.

10. Conditionality and sequencing

The successful implementation of the Twinning project requires the full commitment and participation of the senior decision-makers in the Department of Lands and Survey.
The Department of Lands and Survey will provide:

- Adequate human resources to implement the twinning project together with the twinning partner, in accordance with the agreed twinning contract.
- Facilities necessary for the implementation of the twinning (offices, computers, access to Internet)
- Full access to the DLS systems.

ANNEXES TO PROJECT FICHE

1. Logical framework analysis
2. Organizational Chart of the Department of Lands and Survey

Annex 1 - Logical Framework Analysis

	Intervention Logic	**Objectively Verifiable Indicators (Benchmarks)**	**Sources of information**	**Assumptions (external to project)**
Overall Objective:	The development of a sustainable land management system in Jordan based on the Geographical Cadastral Information.	• Harmonized and streamlined process and services of registration and transactions provided by the DLS. • Land market activities increased significantly and transparency of transaction ensured	• DLS Strategic plan • DLS Action Plan • Progress report and documentation • Project Evaluation Reports	
Project Purpose:	The specific purpose of this project is to enhance the technical and administrative capacities of the Department of Lands and Survey in the field of cadastre and land administration in order to provide complete, accurate compared with reality, and up to date	• One geo-referencing system for cadastral information has been implemented. • Building information representing in the cadastre has been improved in a pilot area. • Re-engineering and simplification of the cadastral procedures has	• Progress reports and documentations • Statistics of land discrepancies cases. • Quarterly Progress reports	• Identification of correct counterparts to work closely with the twinning experts • Commitment of the decision-maker in DLS • Commitment of participants at all

	information and data.	been implemented and evaluated. • Capacity building action plan is improved and implemented. • Institutional co-operation and exchange of information has been agreed upon between the main stakeholders.		involved levels
Mandatory Result1 (Components):	One geo-referencing system for cadastral information has been implemented.	• A detailed assessment report for the existing systems set up is prepared and approved. • A detailed assessment report for the using tools is prepared and approved. • Analysis report including the recommendations is prepared and approved. • Executive recommendations tested inside a selected pilot area using two coordination system (Cassini, JTM). • Results collected and compared by taking discrepancies in consideration. • According the results recommended one geo-referencing system cause reducing discrepancies is approved and implemented in the pilot	• Progress reports and documentations • Quarterly Progress reports • Analysis reports and recommendations documents	• Supportive management at all levels • Full commitment of the parties involved.

		area. • Study the possibility to suggest and fix the approved geo-referencing system inside the DLS law (i.e. one act). • Number of training of trainers programs for staff in the related DLS Directorates are developed and implemented. • Number of study visits to similar institutions in the EU countries to transfer the know-how is carried out during the lifetime of the project.		
Mandatory Result2 (Components):	Building information representing in the cadastre has been improved in a pilot area.	• A detailed assessment report for the situation of the current data base (register & map) for the building schema and methods of capturing and updating building data from the field is prepared and approved. • Analysis report for the finding including the recommendations for (field to be add into the data base, detailed specification for building layer and 3D cadastre) is prepared and approved.	• Progress reports and documentations • Quarterly Progress reports • Analysis reports and recommendations documents	•Supportive management at all levels •Full commitment of the parties involved.

		• The scenario suggested for methods of capture and update the building data to create the layer according to the best international practices is approved and implemented during the lifetime of the project in a pilot area. • A detailed report including the corrective actions of all the problems occurred during the implementation. • The implementation of corrective actions is supervised and followed up during the lifetime of the project. • Number of training of trainers programs is developed and implemented. • Number of study visits to similar institutions in the EU countries to transfer the know-how is carried out during the lifetime of the project.		
Mandatory Result3 (Components):	Re-engineering and simplification of the cadastral procedures has been implemented and	• A detailed assessment report for the existing situation based on questionnaire made for different stakeholders and	• Progress reports and documentations • Quarterly Progress reports • Analysis reports and	•Supportive management at all levels •Full commitment of the parties involved.

	evaluated.	participants of the observed process is prepared and approved. • To evaluate the cadastral services procedures by identifying factors which are responsible for successful and unsuccessful outcomes. • To evaluate the cadastral services procedures efficiency and effectiveness which are measured by times, cost and number of steps for achieving the goal. • Analysis report including the required recommendations which lead to lowering and simplification of cadastral services procedure is prepared and approved. • The lowered and simplified of cadastral services procedure are approved and implemented during the lifetime of the project. • A detailed report including the corrective actions of all problems occurred during the implementation is approved and implemented.	recommendations documents	

		• The implementation of the corrective action is supervised and followed up during the lifetime of the project. • Number training of trainers programs is developed and implemented. • Number of study visits to similar instructions in the EU countries to transfer the know-how is carried out during the lifetime of the project.		
Mandatory Result4 (Components):	Capacity building action plan is improved and implemented	• Analysis report for the current needs and user requirements is prepared and approved. • Developing business action plan including (As-is & As-to be) based on the results of the analysis of the user requirements and outcome of assessment reports for results(1, 2, 3). • Action plan is approved and timely informed of all levels of staff and implemented during the lifetime of the project. • An assessment report for implementation including clear recommendation to	• Progress reports and documentations • Quarterly Progress reports Analysis reports and recommendations documents	•Supportive management at all levels Full commitment of the parties involved.

		motivate and award best workers and team and to insure that the action plan is a part of training strategy of the department. • Number of study visits to similar institutions in the EU countries to transfer the know-how is carried out during the lifetime of the project.		
Mandatory Result5 (Components):	Institutional co-operation and exchange of information has been agreed upon between the main stakeholder	• A detailed assessment report for the determine and set the main stakeholders is prepared and approved. • Develop an initial joint action plan, which represent a first set of actions and initiatives that will begin the process of developing more closely working taking in consideration (technical, organizational, information standards issues). • Action plan is approved and informed of all shared stakeholders and implemented during the lifetime of the project. • Number of training courses on the execution of the joint information	• Progress reports and documentations • Quarterly Progress reports Analysis reports and recommendations documents	•Supportive management at all levels Full commitment of the parties involved.

		and transactions through the three concepts of (reciprocity, stability and robustness) is carried out. • A detailed report including the corrective actions of all problems occurred during the implementation. • The implementation of corrective actions is supervised and followed up during the lifetime of the project. • Number of training of trainers program is developed and implemented. • Number of study visits to similar institutions in the EU countries to transfer the know-how is carried out during the lifetime of the project.		

Annex 2 - Organizational Chart of the Department of Lands and Survey