# The Case Analysis of IMPROWARE Project with PRINCE Methodology Approach

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# ABSTRACT

Water is related to social-political science, engineering, and technology. In most cases, we see the water governance concept based on the "tragedy of common" vision. Nevertheless, this IMPROWARE<sup>1</sup> project can see the community's thinking method with technological interventions for sustainable water development. Despite being a pilot project with limited addition of activities, multisectoral intervention with thinking about community and International, national funding helped to make the project successful. This paper analyses how the project developed with the related concept of the PRINCE methodology, so further analysis of making any projects successful. The data was collected from the official site of project documents, and this paper correlates the PRINCE methodology and brings out innovative, preventive action during project times.

# Introduction

Complexity is the property of a real-world system that manifests in any one formalism's inability to be adequate to capture all its properties. (Mikulecky D., 2001) In that term comes the project manager's ability to manage a project in different parameters with possible calculations of chaos in a control system. We need a systemic approach with an adaptable management system to control those chaotic systems. Project environments are related to social landscapes in which the project's complexity refers to society and people, (Weaver, 2007) and the benefits are also for them. Strategic management plays a significant role; in creating, implementing, and evaluating help to achieve objectives. The internal strength of my selected project evaluation is that it is well documented, EU<sup>2</sup>, UN<sup>3</sup> with government representative backed it so funding was also not a problem, it will install water treatment plants in two sites with improved water cleaning policy in the Mediterranean area. Those plants will help to clean seawater and make it usable for society. The weakness of this project is, in its terms, following policy without realizing its proper outcome based on placement, time, and resource availability. As it was the first of the pilot project, so much deep analysis with GIS<sup>4</sup> software can further improve transparency. Collaboration with Mediterranean areas in terms of water injection on the ground with building water treatment plans is the most significant opportunity; the responsible government can control the water treatment process and provide safe water to the citizen. The extern threats come from the community as the ethnic people hold some areas, possibly disagree on the water distribution process and leave their rights. As a part of those internal and external risks, this paper will systemically analyze that project as a responsibility.

<sup>&</sup>lt;sup>1</sup> Innovative Means to Protect Water Resources in the Mediterranean coastal areas through reinject of treated water.

<sup>&</sup>lt;sup>2</sup> European Union

<sup>&</sup>lt;sup>3</sup> United Nations

<sup>&</sup>lt;sup>4</sup> Geographic Information System

# Literature Review

The PRINCE methodology is a popular project management framework in many businesses, organization. PRINCE stands for Projects IN Controlled Environments, and it was invented in the 1980s in the United Kingdom. It has since become one of the world's most used project management systems. (Hinde, 2018) The purpose of this literature study is to offer an overview of the PRINCE methodology, including its concepts, methods, advantages, and disadvantages. The PRINCE technique is recognized as a 'best practice' solution that incorporates the needs, expertise, and knowhow of its users and supports strong project management principles. (Lowe, 2013) Set of principles provide guidance to manage project successfully. The notion of PRINCE methods is discussed in the project management book by Steven Paton et al. For example, he mentioned business situations in which initiatives need justification based on future benefits and implementation costs. (Paton et al., 2011) Learning for the experience is another important proposition of PRINCE methodologies as in Rodney Turner in his book focus on effective lesson learning procedure and it needs close cooperation between the project team, project management office and responsible business functions; he also gives importance on proper documentation process and overcome the mistakes for future projects in the lesson learning process. (Turner, 2016) The doctrine of role and responsibilities are necessity flyspeck for this reason Mahajan and Singh endow consideration on performance of the team members and avow some types of authority to get the work done with convenience. (Mahajan & Ravindra, 2017) One of the precept of the PRINCE approach is manage by stages which is projects should be divided into stages and progress should be assess at the end of each stage; which mean The culmination of each step is a milestone that may prompt management to sift available ideas, assess the adequacy of present efforts, and make required changes. (Mahadevan, 2009) In the David Hinde book we see the proposition of tolerance especially in initial stage of project work, if project manager takes any decision. (Hinde, 2018) Also, it is essential to look out project manager should only be involved in the verdict beyond the ascendancy of the project team. Finally, in terms of PRINCE principality, tailoring projects and meet with the project requirements are valuable tenets to make any successful. The Projects should focus on producing products that meet the stakeholders' requirements and adapt the specific projects according to the particular needs. The PRINCE methodology provides advantages such as enhanced project management, higher efficiency, and fewer risks. The PRINCE methodology offers a systematic approach to project management that aids in delivering projects on schedule, within budget, and to the desired quality. It also gives a defined risk management framework, reducing the possibility of project failure. Meanwhile Ofer Zwikael in his book mention, Prince methodology allows project managers to focus widely and effectively on the most important areas to improve project management success. (Zwikael & Smyrk, 2019) Companies that follow the PRINCE approach also get many benefits in their corporate sector and selecting- managing big projects. Their employee also predominantly gets an advantage. Though the project plan starts from the top level, its systematic approach takes care of every corporation member. Prince Corporation's image as an employer in terms of salary and wage scales, promotion opportunities and work stability, such as working conditions, company management relations with organized labor, and retirement and other benefit programs should also be included. (Blumberg et al., 2014) The PRINCE method, however, has several drawbacks. One of the most common objections leveled at the PRINCE approach is that it is rigid. Because the technique is founded on ideas and procedures, adapting to varied project settings can be difficult. (Turner, 2016) Another critique is that the process may be bureaucratic, with a lot of paperwork involved in project management. (Turner, 2016)

Finally, the PRINCE technique is a popular project management framework in many businesses. The approach is founded on a collection of concepts and practices that guide managing projects efficiently. The PRINCE technique provides enhanced project management, higher efficiency, and fewer risks. However, the technique has several areas for improvement, such as rigidity and bureaucracy. Ultimately, the PRINCE methodology is a powerful tool for project management, but it must be tailored to the individual demands of the project and company.



## Methodology

PRINCE (Projects IN Controlled Environments) is prevalent in many governmental projects. The earlier PROMPT11 method was enhanced by the Central Computer and Telecommunications Agency (CCTA), renamed PRINCE, and now complies with the BS5750 quality standard. (Colin, 1992) It can be applied to any size project and, through its systematic approach, strives to provide the suitable goods developed by the right people on time and within budget. It is accomplished by arranging and regulating scheduled operations to generate high-quality results. This paper will only show some of the PRINCE methodology's processes and procedures with correlating the IMPROWARE project. This paper will demonstrate the following projects by providing an example of the lessons of upcoming projects.

## Project Background

United Nations Environment Program (UNEP) is well known for its robust policy agenda that supports strong partnerships with several stakeholders. It follows access to information, promoting more excellent protection for environmental defenders, sustainability frameworks standards, economical social, and environmental. (Reporter S., civil society engagement:policies, 2003) Within those global scenarios, the UN proclaims the 22nd of march as world water day based on the deliberations of agenda 021. (Golinelli & Baccarani, 2015) With the support from UNEP and European Union (EU) water integrated management policy, adopting the changing nature in climate governance, efficiency, fiscal and environmental sustainability, and climate change adaptation and mitigation (SWIM). (Reporter, Demonstration Projects, 2014) EU policy in the Mediterranean region beholds its neighborhood policy. Based on that, this paper will describe Innovative Means to Protect Water Resources (IMPROWARE Project) in the Mediterranean coastal areas through the re-injection of treated water.

SWIM has several projects in the Mediterranean region that focus on water strategy with the de-pollute Mediterranean Sea, with that transformation of technology at the regional level. (Reporter, Demonstration Projects, 2014). It has many programs and projects related to policy development, ability building, climate adaptation, research, soft actions, water treatment plants, Etc. IMPROWARE project combines research and soft action with the possibility of planning water treatment plants in Egypt and Tunisia. (Reporter, Projects, 2017)

Currently, the European Union and the Union of Mediterranean countries follow four strategies: 1. Water Governance, 2. Water and Climate Change 3. Water Financing 4. Water demand management and efficiency. EU's SWIM project is for regional cooperations, working to fulfilling that strategy alongside clearing the Mediterranean municipal water, municipal water, and industrial emissions. (Reporter, Support Mechanism, 2014)

### Design

This study focuses on the qualitative approach with the analysis of projects workers belief with their live experiences. (Merriam, 2009). In this study researcher collected data from the program website, official documents, and secondary interviews, then co-relate with the PRINCE method. This method allowed data sourcing and triangulation to identify business cases by asking why this paper starts with the business cases of the selected program. Secondly, it identifies the sponsors from this selected program and who is responsible for which type of work from the top-level approach. Then it talks about the project planning method with a product delivery approach. Finally, it goes with the risk analysis approach, which is well-defined, analyzed, and used as a project log for future similar projects. The primary constraint of this project is that it does not discuss the financial statement of this regarding a program to remove complexity biases.

# **Result and Discussion**

## Program and Project selection

Project Management is about a single project, and program management has interconnected and related projects. At the program level, all projects are focused on change across all relevant parts of the organization linked to program management deliverables. (Southall, 2008) Based on that model under Sustainable Water Integrated Management (SWIM) program developed some projects (see figure 1) for groundwater resources and wastewater reuse for agricultural and industrial uses. European Union promotes studies and engineer applications for water management policies alongside local community-level people engagement. (Andrea et al., 2015). As a sustainable and integrated water management system is needed to balance water supply demand, efficiency, and climate adaption, locally resilient communities must be involved. (Heggelund & De Angelis, 2011)Their involvement will create a more economical value with fighting capabilities against water shortages. SWIM Program focuses on climate and adaptation projects, with sustainable development in north Africa and the Mediterranean basin with the involvement of local people. (Andrea et al., 2015)Though the policies are from a top-down approach, the program is designed with a top approach by doing field surveys, especially on the technical side.

Innovative Means to protect water resources in the Mediterranean coastal areas through re-injection of treated water (IMPROWARE) is a pilot project aiming to manage water resources efficiently by protecting conventional water resources. It has two demonstration sites in Tunisia and one in Egypt (Reporter S., The Project, 2015) The project followed the PRINCE methodologies, where every document, cost, scope, quality, and risk was defined before the project was implemented. Nevertheless, it causes a significant problem under the program management regime. They introduced a cross-functional team, multiple stakeholders are engaged in this project, and multiple projects are running simultaneously. That brings the question of managing enormous scope. The program management has a similar and strategic vision for its interlinked projects, but timely availability and resources bring enormous credibility. (See figure 2)

Moreover, it is a pilot project, something like an experiment, so fixing the budget and human resources before executing gives us considerable risk. During the implication of this project, we face a technical problem in developing a model of a surface with groundwater flow. In a later portion, it will be described. The problem can be easily solved if we focus on resource consumption level on a project-by-project and program basis, following visibility of resource availability in a simple database system and transparent agreement between the department of resource providers and project resource consumers.

ACLIMAS Project	Sustain Water	All Across Jordan	IMPROWARE
	Mediterranean		

Figure 1: Program and Projects of Swim Program (Project, 2015)

The IMPROWARE Project can be broken down into several projects.



## Figure 2: Breaking down the IMRPOWARE Project

## Organization Background

In the initial process, IMPROWARE started its journey in 2012 under the big picture of solving the waste management problem in the Mediterranean area. Italian Minister of environment, land, and Seas played a significant role; (SWIM, 2014) they held bilateral meetings with Egypt and Tunisia to compete for work and shook hands with other stakeholders. In the planning process, the main objective is set to make sustainable water management policies and demonstrations in Egypt and Tunisia site. Make a fighting approach against aquifer deterioration because of climate change, salt sea water, and over-exploitation. EU Commission had funded 5 million euros for this project, which follows a fixed cost approach with 80% total eligible cost of action (information, 2014). With the need for agricultural irritation, local and rural development around the demonstration site and business need for a resilient ecology economy in 2016, the project ends its first phase.

In the execution system, Egypt water treatment plant needs upgradation. Before project implementation, water treatment ability was about 6800 m3/day. After the project implementation, the level raised about 20000 m3/day. With the benefits of that pilot project's success, (Nobariya, 2014) Egypt's water Treatment site can treat 50,000 m3/day by 2030.

In Tunisia project is based on a technical survey and superimposed aquifers. (Korba, 2014) The project's preliminary statement is clear: make water manageable in those two sites. The founding statement is very crucial for any project (S. Andersen et al., 2009). In control process, the documents and risks budget are predetermined; in that case, we can say the project follows the PRINCE2 method, where it has a systemic process, tools, comprehensive documents, and contact regulation with the following stick plans (TSO, Managing successful projects with PRINCE2, 2009). So, the project develops basis on initiation, planning, execution, controlling, and closing stages. See <u>figure 3</u>, for the details purpose of this project.

Purpose of the IM-	Protect water resources in the Mediterranean coastal areas through re-injection of treated		
PROWARE Project	water		
Interest of the	Italian Ministry of Environment, sea and land: gaining reputation, Italian Mediterranean		
stakeholders	influence		
	Egyptian Environment ministry: Their water retreatment plant is improving		
	National Sanitary Utility: Their ground water preservation is happening		
	European Union: After completing those pilot project they will implement bigger project		
	in other Mediterranean EU countries		
Foundation of this	Contracting Authority: European Commission		
project	Program: Sustainable Water Integrated Management (SWIM)		
	Budget: European Neighborhood and Partnership (ENP) financial co-operation with		
	Mediterranean countries		
	Location(s) of the action: Coastal areas of Nubariya, Egypt, and Korba, Tunisia.		
Division Of	Italian Ministry of Environment, sea and land: project co-ordination and management,		
Responsibilities	dissemination, capacity building and support to regional co-operation		
	Egyptian Environmental Affairs Agency: Project partner responsible for the realization,		
	management, monitoring of the Egyptian demonstration site, and dissemination of re-		
	sults		
	ONAS – Office National de l'Assainissement : Project partner responsible for the reali-		
	zation, management, monitoring of the Tunisian demonstration site, and dissemination of		
	results		
Project Methodology	PRINCE 2		

Figure 3: Project Foundation Statement (SWIM, 2014)

### **Stage Plans**

The project plan is motivated by the problem occurring in the northern African region; the people living there faced water scarcity because of climate change. (Angelis et al., 2014) Since 2000 Italian Ministry for the Environment, Land, and Sea has been working in the African Region and Mediterranean region to fight against climate change. They managed to negotiate with the EU and invited several stakeholders to participate in this project. (Negotiations, 2003) It is essential to question how the work is going on and what this project will achieve. Based on that, several critical objectives for this project were set. (Figure 4)

Moreover, the project has several key milestones. (Figure 5) Milestones are the checkpoint of any project, ensuring the right track. (Andersen et al., 2009) The IMPROWARE project also set up many stakeholders and defined the stakeholders into impact and responsibility. (Figure 6) Maintaining good relations with those stakeholders and share a common communication was the main challenge.

The project is a balanced matrix based on project work, so the department and project manager have to coordinate; moreover, the project work is divided into several parts. Under Project lead, several sectors include Project Management information system, legal and finance, survey team, and technical team. (Figure 7) Those projects lead teams are also responsible to the organization departments. As it is a matrix based, Project leader had to negotiate with the responsible department to secure resource availability. This was the project main curtail point as had to note down all resources properly to avoid jeopardy.

Nevertheless, that project had to ensure work goes concurrently and consecutively like project management work concurrently happens with knowledge mobilization and utilized project work. Just like, data collecting work happens concurrently with the geo analysis and hydrological setting team.



reducing ground water over exploitation and improve rural targeted areas with their economic perspective, by providing water irrigation system availability in the agricultural land.
 Make attention to the policy, decision makers alongside the stakeholder of the Mediterranean partner's countries to tackle Water Scarcity problems
 Mobilize Knowledge transfer system by questing how and to contribute to build-up the necessary Planning and Management Skills, both, at Sub-Regional and Regional level
 To encourage Cooperation in the area of Sustainable and Integrated Water Management, through Capacity Building, Institutional Strengthening and Public Participation

Figure 4: Key objective of the project to make it feasible and desirable

Key Milestones of IMPROWARE Project
Project Management

Establishing a common network between partners IT tools
Making Learning platform after symposium for the workers

Data Collection:

Investigation of Agricultural Practice, Needs and constraint
Collecting DATA from ground water use
Investigating the current water treatment plan condition
Collecting Data of hydrogeological information, soil parameter
Collecting data about saltwater intrusion and costal aquifer
Upload data to the GIS

Hydrological Setting in the selected areas:

Perform Airborne electromagnetics
Perform Resonance Sounding survey
Final Characterization of costal Aquifer

Pilot Projects implementing

- 1. Construction of water treatment plant in Egypt
- 2. Upgraded the existing water treatment plant in Tunisia

Capacity Building

- 1. Finalize the E-learning course
- 2. Present the data at the Tunisia Seminars
- 3. Final Conference of the overall all work projects.

Figure 5: Key Milestone of the IMPROWARE Project

Stakeholders	Responsibilities
IMELS – Italian Ministry of the Envi-	Project co-ordination and management, dissemination, capacity building and support to re-
ronment, Land, and Sea	gional co-operation. IMELS has acquired a strong experience in managing cooperation and
	development projects
Egyptian Environmental Affairs	Project partner responsible for the realization, management, monitoring of the Egyptian
Agency	demonstration site, and dissemination of results
Office National de l'Assainissement	Project partner responsible for the realization, management, monitoring of the Tunisian
	demonstration site, and dissemination of results.
Consorzio Universitario di Economia	Project Partner responsible for WP4 – Artificial wetland as secondary/tertiary treatment stage
Industriale e Manageriale	of waste-waters
Consorzio Universitario per la Ricerca	Technical survey; primary/secondary treatment stages and aquifer recharge by treated waters
Socioeconomica e per l'Ambiente	
University of Aarhus	Hydro-geological characterization of aquifers at Nobariya using geophysical methods

Figure 6: Key stakeholders and their responsibilities. (Partnership, 2014)



Figure 7: Project team process



#### **Products Delivery**

Good Governance and effective leadership management is the main priority of the project delivery process. The project team is the heart of effective project governance. (Schwaber & Sutherland, 2016) As the IMPROWARE project has multiple stakeholders and partnerships, the project flows on a matrix-based structure. Also, it had many dedicated teams to do specialized work in the field, like field surveys. It follows PRINCE 2 methodology or the traditional one, where all documents are previously done, and every department knows who is responsible for which work. Functional managers become accountable for each indisputable work, resource allocation, technical survey, Hydrological setting, participation, and capacity building. But the project managers are responsible for task assignments, assigning task to functional resources and obtaining commitment from functional manager. (Charles G, 2011) The Project manager is also responsible for coordinating the availability of resources from the supporting departments (Lock, Project Management, 2013). Healthy distance in this type of big project is necessary as different departments have different partnerships and workflow. (Tuckman, 1965)

The administrator of the EU, alongside the operation level, identifies how the project team sits within the org, mandate by the mandate. (Osagie, 2010) Like as member of the technical survey data analysis team, responsible for uploading the data to the GIS software, and varied it. In that team, the project manager and the functional manager carefully made up a team with cultural diversity for paying the delivery (Schwaber & Sutherland, 2016). The leader-ship capability in that delivery sector was also robust, as it is vital for success. (Abudi, 2020) Staff from other organizations, contractors, field workers, and the home country's government officials come to a single melting pot and make the survey activities successful by completing the data analysis part, customized parametric inversions, 3D modeling, and design of the tertiary water treatment land.

#### **Risk Analysis**

One of the significant risks of that project is identifying the possible location to establish three water treatment plants at the pilot place, Korba, Tunisia. Previously some companies made artificial water reservoir place by building dam. (Feki & Zammouri, 2014, pp. 27-28) Following the checklist approach, we can learn about that area's geographical condition with climate characteristics that underline foreseeable risks. (Feki & Zammouri, 2014, p. 29) With comparison and brainstorming, the current project identifies similar risks cause-effect and connected significant risk events. (Lock, Project Management, 2003, p. 574) By clicking dote and following the fishbone diagram project, the project identified influential risk factors like developing a false water basin model, building wells wrong at the wrong place, with inaccurate infiltration measurements. (Ministry for the Environment, 2011) If those risks happen, IMPROWARE will fail because those are the main specific objective.(See Figure 8)

To avoid those risks, we need to focus on a proper technical survey; if anything, wrong happens here, the project is in a nutshell, so its impact is high. (Lock, Project Management, 2003, p. 579) The inputting process on GIS with matching previous data is also essential. Hard rocky with the hot condition might be a medium impact as people may become sick and demotivated. In that context, Accident and Sick insurance seem essential. (Lock, Project Management, 2003, p. 588) As generalized, we need to specify the high, medium, and low likelihood and impact risk. (Kerzner, Project Management: A Systems Approach to Planning, Scheduling, and Controlling, 2017) Some risks we may avoid; some have to face it. Likewise, for the survey we need vehicles, that transport-related risk factors we can transfer to car agency. We can also share risks with related stakeholders; because of extreme weather, we can share the money risk with the Tunisian government as doing the survey might be delayed with extra cost. For unseeable risks, it had a crisis action committee that worked as a sleeping agent; if anything happened, they would be active and respond by using emergency funds or a contingency plan.





Figure 8: A Ishikawa fishbone diagram for risk about water treatment process in korba

## 4.6 Problem solving approach

Key development of the project handover with amelioration based on monitoring and task control with resource management. But not just inspection; focus on control over the project with a set of patterns as a habit. (G. Cobb, 2011) In terms of achieving technical survey deliverables of the project (Figure9), it followed day-to-day task superintendence evaluation with an enclosed loop system. After inputting every plan work, (Figure 10), the project manager will ensure that corrective actions occur afterward control loop is effectively closed (Lock, Project Management, 2003, p. 470). That project progress also needs digital reports as a real-time recording. The project manager also ensured that the team lead did stewardship by walking to find a real scenario like a spot check, viewing physical progress with encouragement where it is due. (Lock, Project Management, 2003, p. 476) Regarding stimulus, the IMPROWARE project was vast and managed good communication progress for deliverables. The team was allowed to have flexible time to recover unexpected events from the original plans. (NAO, 2011) They get the autonomy with proper inspection, but in the PRINCE approach, the exception report seems to be "known-known" as action leverage by the documents. Based on which the change happens, but in the public sector, the difference supposes to occur informally. Conflict may emerge between jobs with different priorities, with peace negotiation techniques to solve the problem between PMs.

All those solutions to problems depend on following a risk management template, but sometimes we miss the critical risk (Spradlin, 2012). So, we need a mixed approach based on the situation, like traffic light reporting, Enterprise Project Management, and specialized software. (Kerzner, Project Management: A Systems Approach to Planning, Scheduling, and Controlling, 2017) Just like I identified the problem in the previous part, now we need to think of the best solution with lots of alternative options for troubleshooting.

	4. Collection of hydrogeological information on the aquifer geometry and soil properties
	4. Collection of hydrogeological information on the aquiter geometry and soil properties
	4. Collection of hydrogeological information on the aquifer geometry and soil properties
	4 Collection of hydrogeological information on the aquifer geometry and soil properties
	3. Investigation on the WWTP in the present condition
	2. Investigation on Oround water use and availability
	2 Investigation on Ground Water use and availability
Task	1. Investigation on agricultural practices, needs and constraints
	pumping rates, piezometric level and Water Quality
	3. To acquire and homogenize all available information on evolution of Ground Water use,
	2. To acquire and nonogenize an available information on substitute aquirer systems at
5	2 To acquire and homogenize all available information on subsurface aquifer systems at
Objective	1. To acquire all available data on existing Waste Water Treatment Plants (WWTPs)

Figure 9: Deliverables of the IMPROWARE Technical Survey (IMPROWARE, 2012)



Figure 10: Cybernetic Control of IMPROWARE task (Lock, Project Management, 2003, p. 471)



### Quality Assurance

The IMPROWARE project secured the possible partnership between ENPI<sup>5</sup> countries as those two pilot sites provide cost-effective desertification, encouraging other Mediterranean countries to hop into the same program. It is raising more stakeholder engagement to raise awareness with the community-level arrangement. All objectives are successful because of each deliverable's benefits realization plan. The IMPROWARE program not only helps to develop policy but also helps agro-business reduce water scarcity. That was possible by following the Business change management with tracking accuracy and relevant information. (TSO, Managing Successful Program, 2011) Also, the program followed a different approach with flexibility, enabled adaptability in a changing business environment, and focused on effective management of key stakeholder relationships (Lycett et al., 2004). During the implementation stage, toplevel managers always engage, focus on training, and adequately use resources. As it was a vast project, sometimes the external expert performed their work correctly. The business benefit made even if any change was needed based on organizational structure, Business model of functions, decision-making approach, clear staffing role, skilling- training, Information systems, costs, and performance measure. (Reporter S., 2010 to 2015 government policy: major project management, 2015) The Benefits Realization Planning Process is concerned with addressing the problem that many public sector projects and programs fail to deliver their objectives or benefits fully. If we underestimate the anticipated, unanticipated use, program and project outcomes may fail, like installing an infiltration site that encourages the government to build a centralized water distribution system recycled by seawater.

#### Anticipated Benefits

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## Conclusion

Most water models were characterized by the old distribution model with a lack of communication between community people, stakeholders with the government. The SWIM program is the first set to remove that lapse. However, the

<sup>&</sup>lt;sup>5</sup> ENPI= Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, The occupied Palestine Territory, Syria, Tunisia <sup>6</sup> ENPI= Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, The occupied Palestine Territory, Syria, Tunisia

project's significant gap remains, like civil society and government communication. Otherwise, all management processes are implemented successfully. The project plan starts by following Initiating, planning, execution, controlling, and closing stage. Prince's methodology was followed. As a result, all the documents are premade alongside the pretemplated risk identification techniques; likewise, the fishbone diagram and cause-effect method were used. It followed the digital report inputting system with progress and daily analysis problems to troubleshoot those problems. Ultimately, by following the benefits realization plan, all benefits are gained. Finally, the participatory model has also raised the issue of the effectiveness of targeted communication initiatives related to water, which have been adapted based on the regions' projects.

# References

- Heggelund, G., & De Angelis, A. (2011). *The importance of social dimension in building a climate-resilient society in E-Discussion on Climate Change and Human Development*. Bankok: UNDP Asia-Pacific Regional Centre.
- Abudi, G. (2020, july 7). *The Five Stages of Project Team Development*. Retrieved from Project-Management website: https://project-management.com/stages-of-team-development/
- Andersen, E., Grude, K., & Houg, T. (2009). Goal Directed Project Management: Effective Techniques and Strategie. In G. Kristoffer, *Goal Planing-Milestone Planning* (pp. 70-71). London: Kogan Page.
- Andrea, D., Gabriella, C. R., Pierantonelli, L., & Caropreso, G. (2015). IMPROWARE as a successful practice of local sustainable water integrated management. *Sinergia*, 20.
- Angelis, A. d., Crespi, G. R., Pierantonelli, L., & Caropreso, G. (2014). IMPROWARE as a successful practice of local sustainable water integrated management. *Sinergia*, 18.
- Blumberg, B., Cooper, D., & Schindler, P. (2014). EBOOK: Business Research Methods. McGraw Hill.
- Charles G, C. (2011). *Making Sense of Agile Project Management: Balancing Control and Agility*. New Jersey: John Wiley & Sons, Inc.
- Colin, B. (1992). Practical Prince: A Guide to Structured Project Management. Oxford: Blackwell Pub.
- Feki, H., & Zammouri, M. (2014). Conceptual model for groundwater artificial recharge Tunisia. Sinergie , 27-28.
- G. Cobb, C. (2011). Making sense of Agile Project Management. New Jersey : Wiley.
- Golinelli, G., & Baccarani, C. (2015). Sinergie for the environment. Sinergie Journal, 7-9.
- Hinde, D. (2018). Prince2®: Study Guide. John Wiley & Sons.
- IMPROWARE. (2012, semptember 2). *General Presentation*. Retrieved from Improware Program Content : http://www.improware.eu/wp-content/uploads/2017/10/All-2-2General\_Presentation\_IMPROWARE.pdf
- information, I. g. (2014, February 3). General Presentation IMPROWARE. Retrieved from Improware European Union: http://www.improware.eu/wp-content/uploads/2017/10/All-2-2General\_Presentation\_IMPROWARE.pdf
- Kerzner, H. (2017). Project Management: A Systems Approach to Planning, Scheduling, and Controlling. Wiley: New Jersey.
- Kerzner, H. (2017). Project Management: A Systems Approach to Planning, Scheduling, and Controlling. New Jersy: Wiley .
- Korba, T. s. (2014, February 1). *Pilot Areas: Korba, Tuisia*. Retrieved from IMPROWARE European Union: http://www.improware.eu/pilot-areas/korba-tunisia/
- Lock, D. (2013). Project Management. Burlington: Gower.
- Lowe, D. (2013). Commercial Management: Theory and Practice. Wiley-Blackwell.
- Lycett, M., Rassau, A., & Danson, J. (2004). Programme management: a critical review. *International Journal of Project Management*, 289-299.
- Mahadevan, B. (2009). Operation Management: Theory and Practice. Pearson Education India.
- Mahajan, j. p., & Ravindra, S. (2017). Management Principles and Applications. Vikas Publishing House.

Merriam, S. B. (2009). Qualitative Research: A Guide to Design and Implementation. John Wiley & Sons.

- Mikulecky, D. (2001). The emergence of complexity: science coming of age or science growing old?. *Computers & Chemistry 25, no. 4*, 341-348.
- Ministry for the Environment, L. a. (2011). *Innovation means to protect water resources in the mediterranean costal areas through re-inject of treated water.* Bruxelles: Ministry for the Environment, Land and Sea.

NAO. (2011). Initiating successful Project . London: National Audit office .

Negotiations, E. N. (2003, January 23). *Enlargement*. Retrieved from European Commission : https://neighbourhood-enlargement.ec.europa.eu/neighbourhood/overview\_en

- Nobariya, E. (2014, February 1). *Pilot Areas: Nobariya, Egypt.* Retrieved from Improware European Union: http://www.improware.eu/pilot-areas/nobariya-egypt/
- Osagie. (2010). Strategic partnership an imperative for project management in multiplayer setting. *Association for the Advancement of Cost Engineering*. Atlanta: AACE International.

Partnership, T. (2014, February 12). *Improware*. Retrieved from IMPROWARE European Commission : http://www.improware.eu/improware/the-partnership/

- Paton, S., Clegg, B., Juliana, H., & Pilkington, A. (2011). EBOOK: Operations Management. McGraw Hill.
- Project, R. o. (2015, february 2). *Demonstration Projects*. Retrieved from Sustainable water intergrated Management: https://swim-sm.eu/index.php/en/demonstration-projects
- Reporter. (2014, february 2). *Demonstration Projects*. Retrieved from Suatainable Water Integrated Management: https://swim-sm.eu/index.php/en/demonstration-projects/objectives-demonstration-projects
- Reporter. (2014, january 1). *Support Mechanism*. Retrieved from Sustainable water inegrated Management : https://swim-sm.eu/index.php/en/support-mechanism/2015-04-28-07-36-29/background-sm
- Reporter. (2017, December 19). *Projects*. Retrieved from CUEIM Consorzio Universitario di Economia Industriale e Manageriale: https://www.cueim.org/en/projects/improware-innovative-means-to-protect-water-resources-in-the-mediterranean-coastal-areas-through-re-injection-of-treated-water/
- Reporter, S. (2003, april 2). *civil society engagement:policies*. Retrieved from United Nation Environment Programee: https://www.unep.org/civil-society-engagement/policies
- Reporter, S. (2015, December 30). 2010 to 2015 government policy: major project management. Retrieved from UK Government : https://www.gov.uk/government/publications/2010-to-2015-government-policy-major-project-management/2010-to-2015-government-policy-major-project-management
- Reporter, S. (2015, february 2). *The Project*. Retrieved from Improware: http://www.improware.eu/improware/the-project/
- S. Andersen, E., V Grude, K., & Haug, T. (2009). Goal Directed Project Management. London: Kogan Page.
- Schwaber, K., & Sutherland, J. (2016). The Definitive Guide to Scrum: The Rule of Game. USA: Scrum.org.
- Southall, F. (2008). *Strategic Public Sector Programme Management*. Stamford: Chartered Institute of Purchasing & Supply.
- Spradlin, D. (2012, September 2). *Decision Making And Problem Solving*. Retrieved from Harvard Business Review : https://hbr.org/2012/09/are-you-solving-the-right-problem
- SWIM, I. i. (2014, February 3). *IMPROWARE*. Retrieved from IMPROWARE European Union: http://www.improware.eu/improware/
- TSO. (2009). Managing successful projects with PRINCE2. London: Stationery Office.
- Tuckman, B. (1965). DEVELOPMENTAL SEQUENCE IN SMALL GROUPS. *Psychological bulletin*,63, pp. 384–399.
- Turner, R. (2016). Gower Handbook of Project Managemen. Routledge.
- Weaver, P. (2007, November 16). A Simple View of 'Complexity' in Project Management. Retrieved from Mosaic Project Services: https://mosaicprojects.com.au/PDF\_Papers/P070\_A\_Simple\_View\_of\_Complexity.pdf
- Zwikael, O., & Smyrk, J. R. (2019). Project Management: A Benefit Realisation Approach. Springer.