

BALI BEACH PROJECT

PROJECT MANAGEMENT PLAN

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PROJECT MANAGEMENT PLAN

In this project management plan an elaboration is made for a multidisciplinary project at the Ministry of Public Works in Bali, Indonesia. The Indonesian Ministry of Public Works is the department of the government responsible for public work matters (Ministry of Public Work, 2009). The goal of this multidisciplinary project is to contribute to the ongoing research project of the Ministry of Public Works on the current state of the coastal structures in Bali. In the months before the project, there has been extensive contact between the students and the supervisors/contact persons from both the Ministry of Public Works and the Delft University of Technology. Preconditions for the project have been arranged and this project management plan serves as the end of the preparation phase and contains information about the urgency of the project, methodology, risks of the project and agreements in order to guide this project to a successful completion. If any problems will arise during the project, the project management plan is a useful tool for guidance and problem solvation.

1 PROBLEM DEFINITION

1.1 URGENCY

Erosion of Bali's coastal regions and shores has become an increasing problem. In 1987 52 kilometers of the 437 kilometer long shoreline of Bali had been affected by erosion, while in 2012 97 kilometers shoreline suffers from heavy coastal erosion (Winarti, 2012). According to a survey from the Ministry of Public Works the island of Bali has lost up to 30 percent of its coastline due to environmental degradation and sea erosion (de Suriyani, 2012).

Tourism is the largest economic driver in Bali, which is famous for its exotic beaches (Parker, 2013). However, due to the erosion, the most visited beaches of Nusa Dua, Kuta and Sanur deteriorated into narrow and unsightly beaches. In order to maintain economic welfare of Bali a several projects have been executed, e.g. the Urgent Bali Beach Conservation Project by Nippon Koei from 1991-2008 (Nippon Koei, 2008). The Ministry of Public Works is constantly examining the performance of the coastal structures along the shoreline of Bali, in order to safeguard the beaches, buildings and agriculture that attract the large amounts of tourists.

1.2 OBJECTIVE

In order to safeguard the socio-economical interests of Bali, and to preserve the natural treasures, our research focuses on identifying the current condition of critical coastal structures in Bali. Critical structures will be identified, tested and if needed, suggestions for improvement will be made on their safety, economic and environmental aspects. The research question states: *"What measures have to be taken to ensure that the critical coastal areas perform optimally, taking safety, economic feasibility and environmental sustainability into account?"*.

2 GOAL DESCRIPTION

The Bali Beach Project team has a high regard for providing a qualitatively high solution and report as efficiently as possible, which meets the expectations of the client as well as the student's expectations. To ensure these expectations will be met, a number of goals are set. These goals are bilateral: on the one hand there is an aim to provide the client with the best possible result, while on the other hand the team aims to maximize our learning potential as students of the the Delft University of Technology.

2.1 PROJECT RELATED GOALS

- Providing the client with valuable advice on the field of innovative beach restoration;
- Finish the project within the scheduled time;
- Delivering a highly qualitative report;
- Getting a better understanding of working in practice and abroad in a different culture;
- Develop a sustainable relationship which can be used for further collaboration between the Ministry of Public Works and multidisciplinary groups from the Delft University of Technology.

2.2 PROCESS RELATED GOALS

- The team has its own responsibility and freedom to act within set boundaries;
- There will be a shared vision during the whole project;
- The team communicates effectively;
- The team sticks to the planning;
- The team tries to give direct and honest feedback; positive and negative, but always constructive.

3 VISION

Besides the mission objective as stated in the problem definition, vision on aspiration and motivation is developed to define the desired achievement with the research. In the first place a contribution to the ongoing research of the Ministry of Public Works. Our research should inspire and help the engineers of the Ministry of Public Works to conserve the coastal areas of Bali. Our vision is stated below:

Our team aims to effectively contribute to the ongoing research and therefore influence local authorities to preserve the coastal structure in way that the island is protected in a safe, environmental, sustainable and economical way for generations to come.

4 SCOPE

4.1 PROJECT OBJECTIVES

The research aims to identify and improve the current state of coastal structures in Bali. The research will contribute to the ongoing research of the Ministry of Public Works, by testing whether the critical structures perform within the requirements for safety, economics and environmental aspects and how the proposed solutions could benefit the coastal area.

4.2 PROJECT DELIVERABLES

- A research contribution to the ongoing projects of the Ministry of Public Works;
- An analysis of the performance of the critical coastal structures;
- A recommendation on the optimal alternatives for critical coastal structures;
- A preferred strategy to safeguard and implement improvements on the coastal structure;
- A research report which will be used to assess our multidisciplinary project at the Delft University of Technology;
- A research report that can be used as fertile ground for further research by other Multidisciplinary groups of the Delft University of Technology.

5 SURROUNDING INFLUENCES

During the research different stakeholders and surroundings have to be taken into account, because they possess the power to influence the outcome of the research. These stakeholders consist of the Ministry of Public Works, the the Delft University of Technology, local government and tourism business.

5.1 INTERNAL

The Ministry of Public Works will firstly provide most of the essential input data needed for the project. Afterwards they will guide the research as a quality advisor and consultant. Finally the report will be delivered and presented to the Ministry of Public Works. The influence of the Ministry of Public Works on our research will be high and a double check on all the information and opinions given by their experts should minimise the miscommunication.

This research is part of the Civil Engineering program of the Delft University of Technology. At the start of the project a Project Management Plan will be assessed by professors from the Delft University of Technology. A second quality assessment will be at the end of the research project in the form of a report and a presentation. Therefore the direct influence from professors from the university on the research stage will be rather small. However, Delft University of Technology students are expected and used to meet a certain quality standard which will act as an invisible hand principle.

5.2 EXTERNAL

The local government could influence the effects of coastal erosion by spatial planning and handing out permits. Their political agenda for Bali could give rise to economical and tourism activity on the island and therefore determines the necessity to protect certain areas. Besides the spatial planning limits the possible solutions to enhance the coastal area in a sustainable and safe manor. Secondly, the local government of Bali has yearly approximately 4 million dollar available for protection of coastal structure. This could lead that our proposed solution will not be feasible (de Suriyani, 2012).

Bali is mainly based on the tourism business which will be growing in the next couple of years. In the research the growth of tourism on Bali should be taken into account. Besides the tourist places that have to be protected and developed, tourism is a excelerator for the real estate and construction market. Foreign and local investors are attracted to invest on property on the island. The economical power of these investors and tourism tycoons could influence the local politics.

6 RESEARCH DESIGN

6.1 METHODOLOGY

Prior to our project, in the first phase of the planning(see chapter 8, planning), required knowledge about the current coastal structures in Bali will be obtained via limited literature studies and contact persons and familiarity with the facilities and ongoing research of the Ministry of Public Works is created. In the second phase of the research, the current state of the coastal areas is identified based on gathered information, field research and expert meetings. This is used to determine the most critical coastal areas. In the third phase the potential structures are identified and alternatives are developed for the most critical coastal area. These structures are analysed on technical, economic and social factors, by conducting field

research, expert meetings, cost-benefit analysis, cross-comparison criteria analysis and a multi-criteria analysis.

The findings of the third phase are used to develop an integral strategy, which is a proposal for improvement of the critical coastal area. This integral strategy, or final concept, could be used by the Ministry of Public Works to get new insights when redeveloping beaches around Bali, on technical, economic and social aspects.

6.2 RESEARCH APPROACH

In the research project different sources for gathering and processing information are used. The main sources for input of information will be the (scientific) website (google scholar, scopus), books brought from the Netherlands, field research and the information provided by the experts of the Ministry of Public Works.

7 MULTIDISCIPLINARY ASPECTS

The scope of the project includes multiple disciplines. Two of the main causes of coastal erosion can be found in the removal of offshore reefs, in the construction of large tourist resorts and the placement of Denpasar airport (Syamsudin, Tsuchiya, & Yamashita, 1994) (San-Nami, Uda, & Onaka, 2013). These two factors have caused problems which are highly related to hydraulic engineering and coastal sciences. The causes can on the other hand partly be found in project management. Solutions can be found in hydraulic or offshore engineering.

The main financial driver in Bali is tourism (Internations, 2014). Therefore the coastal conditions are of great importance to the job opportunities of the inhabitants of Bali. A solution has to be found in order to stop and repair the vast coastal erosion. Furthermore this problem is nationwide therefore the availability of sufficient funds has to be investigated. The causes of the problems can mainly be described in economical and technical terms. These causes translate into hydraulic engineering issues which have to be solved. In order to come to an effective integral solution a cooperation must exist between these disciplines.



Figure 7-1: Framework for a multidisciplinary approach for projects (Own Image, Adapted from R.J. Verhaeghe, 2014).

In Figure 7-1: Framework for a multidisciplinary approach for projects (Own Image, Adapted from R.J. Verhaeghe, 2014). Figure 7-1 a framework is given which is adapted from the Infrastructure Projects: Planning and assessment course from Dr. Ir. R.J. Verhaeghe. It is adapted to the Bali Beach Project and shows which methods are used and in which course these are learned, which information is needed and which measures should be taken in order to arrive at an integrated proposal for a restoring a beach.

8 PROJECT PLANNING

The Gantt Chart can be found in appendix A and will be used to keep track of our progress. The project is divided in the five phases: Orientation, Evaluation, Research, Strategy, Finalization. These phases are roughly defined beforehand, but will be constantly updated and elaborated during the project.

9 PROJECT RISKS

In order for the project team to be prepared for the research when facing a cross cultural environment, risks are identified with their cause, events and precautions. The impact on this research is related to the scope and time, costs are not a main driver.

9.1 PLANNING

The maximum amount of time available for this project is ten weeks. Phases can turn out to be more time-consuming than initially planned, resulting in an incomplete research at the end of the project. Cuts can be made in the experiment stage. As the other stages are all detrimental to the project and laboratory stage will only validate the technical expectations. This can also be done in future research.

9.2 EXPECTATIONS

If the expectations of the Ministry of Public Works turn out to be different than the research proposal, adjustments have to be made to come to a compromise that would suit both the Ministry of Public Works and the Delft University of Technology. The expectations of the Ministry of Public Works will be leading.

Precautions for planning and expectations risks: Include slack in the planning and define scope with expectation boundaries. Create an introduction presentation and clearly communicate the bilateral expectations.

9.3 INFORMATION

The research requires specific information. Discrepancy can occur between the acquired information and the required information, resulting in the urge for more research, which can delay the planning.

For example, If there is no possibility to visit all planned sites due to unforeseen circumstances, the research will continue based on the actual available site information. In the case of information of poor quality, assumptions have to be made in cooperation with the local experts.

Computers are fragile assets, which could result in errors, defects of theft and thus result in loss of information and a delay in the planning.

9.4 COMMUNICATION

Balai Pantai is established in a remote area, where the local Indonesian people often do not speak fluent english, resulting in a language barrier where a lot of information can not be communicated clearly.

Precautions for information and communication risks: Acquire a bahasa dictionary for direct conversation and make extern backups of the work on clouds or hard drives. Writing down the questions in plain English in order for them to have time to think about the questions will result in a smaller impact of the risk.

9.5 FACILITIES

Bali is an island without a reliable wired internet connection, where WiFi sometimes does not work proper enough to use the usual online means to which the project team is dependent on, which can result in a situation where it is impossible to work.

Precautions for facilities risk: Acquire offline means so it is possible to work without a reliable internet connection. Download google drive desktop in order to work on the, as well as off the line on the same documents. Acquire cellular networks on phones in order to create personal WiFi hotspots. Bring books about coastal erosion. All reduces the impact of the risks.

9.6 PERSONAL RISKS

Unforeseen personal circumstances(sickness, death of relatives, injury, etc.) can always occur, resulting in a team member to not be able to do his/her task.

Precautions for personal risks: A guideline is set so that the project cannot be sufficiently completed with less than 3 persons. In other words, if more than more than two team members cannot carry out their tasks for more than two weeks, the continuation of the project has to be consulted with the Delft University of Technology and Ministry of Public Works supervisors.

10 COMMUNICATION AND INFORMATION MANAGEMENT

10.1 MEETINGS AND WORKING TIMES

- The team starts every day at 08:00 with a short team meeting (15-20 minutes) in the common work place. During this meeting every team member gives an update about the status of his/her task;
- Working days stop at 16:00, which makes for an 8 hour working day;
- Meetings with the Ministry of Public Works supervisors will be held weekly if they agree with it. This meeting will preferably be held on monday morning between 09:30 and 12:00. One representative of the team is responsible for making an agenda for this weekly meeting. If the the Ministry of Public Works supervisors are not available during this time slot, the meeting can be shifted towards another day or time as early as possible in the week;
- Every wednesday afternoon there will be a brainstorm session with all the team members. The brainstorm starts at 15:30 and will take approximately one hour;
- Minutes will be made from all meetings and brainstorm sessions. Each meeting, another team member is required to keep minutes. The agenda and minutes will be collected and bundled per week and saved on the Google drive in a separate folder.

10.2 ELECTRONIC COMMUNICATION

- All team members have an Indonesian sim-card and hence an Indonesian telephone number. This telephone number is used for communication with other team members and the Ministry of Public Works supervisors;
- The e-mail address: *balibeachproject@gmail.com* is used for communication to external parties and TUD supervisors. The TUD supervisors will receive a weekly update. If required for personal questions, personal e-mail addresses can be used for communication;
- Relatives, friends and other interested parties can follow the progress of the research project on the facebook page: <http://www.facebook.com/balibeachproject>;
- In the first week of the project, a schedule will be made in which the representatives for the agendas, supervisory emails and minutes will be appointed.

10.3 INFORMATION

- The team will work in a shared Google drive document. When a part of the report is finished, that specific part will be copied into the main Word file using the correct layout;
- The team members are expected to work in the same room to enhance the information exchange. The room should include a large table, a whiteboard and an empty wall to hang on documents;
- Sources will be referred to using Word References in APA 6th style. When working in Google Drive, sources will mentioned at the bottom of the document. This is an absolute necessity to deliver a scientifically valid end-report;
- To ensure team members, experts and supervisors are consistent with the use of definitions at the final assessment of the a glossary is attached at the beginning of the report.

10.4 REPORT STYLE

- In the report all team members will use the same font and graphics to ensure a uniform report will be delivered. From the start team member use the font and graphics showed in appendix B. A main working document is attached to the google drive and contains a standard format which will be used;
- A standard format is used for the minutes.

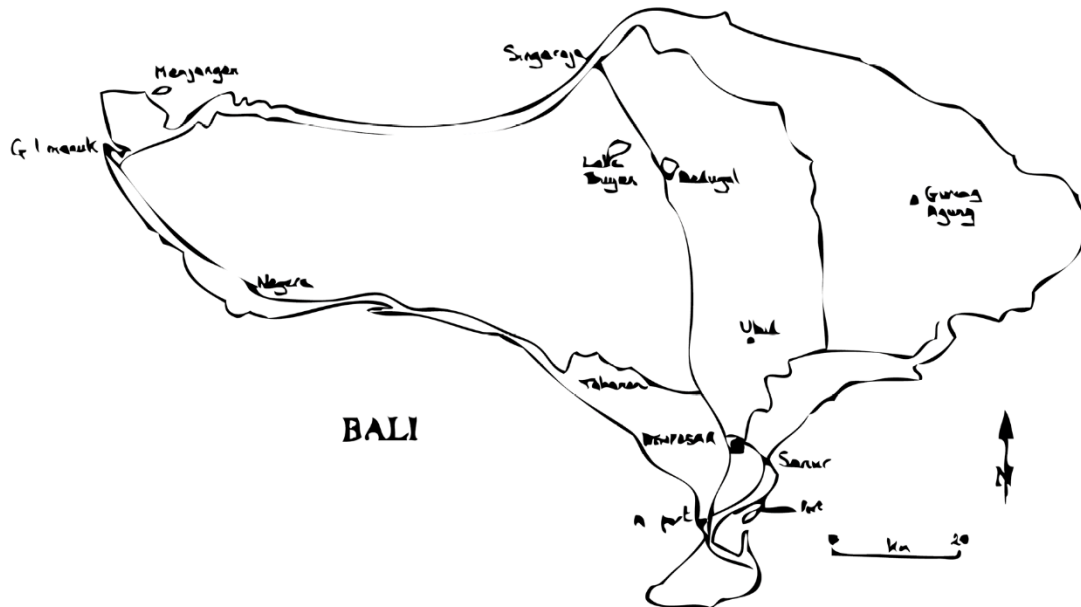
11 PRACTICAL INFORMATION

- The project will start on monday 31st of August 2015;
- Duration of the project will be maximum ten weeks, end date: Friday 6th of November 2015;
- Dormitory is needed from Saturday 29th of August until Sunday 8th of November 2015;
- Dormitory will be provided by the Ministry of Public Works, as described in the e-mail of the 1st of April 2015;
- Dormitory will be preferably nearby the Balai Pantai research center in Bali;
- Preferred is a shared living space with (separate) sleeping rooms;
- Local transport will provided by the Ministry of Public Works as described in the e-mail of the 1st of April 2015;
- Our living permits will be provided by the Ministry of Public Works agreement as foreign students;
- Flight tickets from the Netherlands to Indonesia and from Indonesia to the Netherlands will be paid by team members;
- Living expenses will be paid by team members.

12PARTNERING CHARTER

BALI BEACH PROJECT

AN EVALUATION OF THE COASTAL STRUCTURES IN BALI, INDONESIA



VISION:

"Alah bisa karena biasa"

"Practise makes perfection"

MISSION STATEMENT:

Our team aims to effectively contribute to the ongoing research and therefore influence local authorities to preserve the coastal structure in way that the island is protected in a safe, environmental, sustainable and economical way for generations to come.

VALUES

Excellence
Personal growth
Multi-disiplinary collaboration
Cross-cultural experience
Openness

NORMS

Tasks:

Work is divided equally
tasks are interchangeable

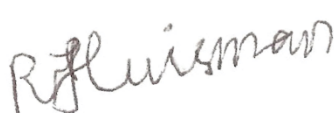
Procedures:

Flexible yet accountable
Presence

Atmosphere:

Pro-active attitude
Positive feedback
Celebrate success

SIGNATURES:


13 EVALUATION OF THE PROJECT

This chapter elaborates on the evaluation of the project and all it entails.

Communication proved to be more challenging than we initially thought. In particular in Gerokgerak at Balai Pantai, where the purpose of our research was unclear. Not many employees had a basic knowledge of the English language and could not understand our attempt at Bahasa Indonesia. In Denpasar, the situation improved and we were able to receive data that could be used for the research, but the language barrier still posed its challenges. These mostly resulted in late arrival of required data and miscommunication during the beginning phases about the subject of the project.

The data that arrived late or not at all, created a delay for us. It seemed that a lot of studies surrounding this subject were already completed but this was not made clear to us. So the beginning phase of the project went on a bit longer than suspected. This made it necessary for us to speed up during the other phases and work in the weekends. The language barrier also created a difference in expectations when we first arrived. Balai Pantai was expecting us to have full working knowledge of Hydraulic Engineering, although none of us are involved in that Master programme. Even though we disclosed this during initial contact through e-mail, this turned out to be unclear.

A difference in work ethic and culture was apparent but that is expected in every foreign country. We quickly got used to these differences and adjusted accordingly.

During our stay in Bali, Wifi was a constant issue. At Balai Pantai in Gerokgerak one of our team members was not able to connect to the internet at all and the rest had a weak connection at best, if at all. The colleagues at Balai Pantai were very cooperative and gave us a dongle that would connect us to the internet, unfortunately it only worked on one laptop at a time.

In Denpasar, Wifi was a bit better but would still, periodically, fail for longer periods of the day. This led us to venture off to coffee shops or home where we continued with little improvement to the Wifi. With patience and connecting to our phones, using Wifi-hotspots, we managed to get the information needed from the internet.

After two weeks at Balai Pantai in Gerokgerak we moved to BWS-BP in Denpasar. This was due to the fact that there was more availability of required information at BWS-BP. We were very well supported by both parties during our move. Help with moving our belongings and finding new accommodations were kindly offered. Both parties were still involved in the project but in a more efficient proportion.

With dedication and open communication we powered through and overcame these challenges, with this project as result which is a fertile ground for future multidisciplinary groups from the Delft University of Technology to execute a research.

The internal group process between the team members also had its flaws. Before going to Bali we decided not to assign different roles to the team members, in order to keep a pleasant atmosphere without hierarchical tensions. The lack of information and direction often resulted in team members not exactly knowing which role to take and thus in small conflicts. A way to avoid this in future collaborations is to nevertheless draw an organisation scheme in which a team member takes the role as a leader, and this role can exchange over the weeks in order to give everyone equal opportunities.

Besides these small conflicts the values and norms drawn in the partnering charter are largely achieved and the total multidisciplinary and cross cultural experience has been extremely instructive for all team members.

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