CONTINGENCY PLANNING IN MARINA MANAGEMENT

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Abstract
This study is intended as a contribution towards a successful practice of contingency planning as a function of crisis management in marinas. Firstly, a situation analysis has been implemented and major risks are identified. Secondly, the factors that lead to success or failure in the implementation of crisis management have been put forward. Along with a systematical proceeding in designing a contingency plan, the steps and stages of it have been defined and detailed. Significance of scenarios in response to emergencies has been pointed out. An assessment of crisis impact value has been done for the identified contingencies. The decision making process for the three phases of a crisis namely; preparedness, response, and restoration has been studied and the differences shown. The elements of the contingency planning are training, communication, logistics, coordination, security, and environmental concern. Performing brilliantly in any number of functions does not guarantee success, but failing in any one may lead to total disaster. Insurance may be a remedy in meeting some losses from the monetary point of view, yet it never brings back the lost resources and lives.

1. Introduction
Planning is anticipating the future and determining the best courses of action to achieve organizational objectives. Analysts classify planning on its scope as: Strategic planning for determining the primary objectives, Tactical planning for short term implementation of current activities, Operational planning for setting the work standards or schedules to implement tactical plans, Adaptive planning for ensuring flexibility for responding to changes, and Contingency planning for emergencies.

Contingency planning covers problems resulting from a crisis to enable the company to resume operations as quickly and smoothly as possible. The process involves two components: business continuation and public communication (Boone and Kurtz, 1996: 194).

Yachting tourism together with its infrastructure of yacht harbors, namely marinas provide significant resources for the economy. Serving as an ‘accommodation sector’ there are 18 licensed and totally 34 marinas in Turkey where some weaknesses and threats exist. In a recent study, carrying out a SWOT analysis, some weaknesses of Turkish yachting tourism
industry were found as ‘insufficient vocational education and training, difficulties in providing raw materials and technological equipment, high taxes on imports, managerial and financial problems, etc.’ and threats as ‘wars and conflicts in the region, terrorism, pollution, etc.’ (Cerit, Kisi, and Tuna, 1995) all of which need to be considered for contingency planning.

The objectives of this study are to determine the role that contingency planning can play within the modern marina management concept; and to develop a model for the planning in order to create management strategies to speed recovery from crises. However, there are technical, environmental, organizational and administrative problems facing planners. There is practically no way of predicting even approximately what crisis, how and when may affect the company. This is the main reason for opting for a scenario analysis.

The objective function of the model is the minimization of:

- losses of lives
- pollution
- economic costs
- period of interruption

Methodology: The study formulates hypotheses regarding potential problems and opportunities. The design of the study is flexible in order to discover ideas and insights not previously recognized. Approaches employed include secondary data sources, observation, and case histories. The exploratory design is appropriate for the situations of problem recognition and definition and can be useful in identifying alternative courses of action.

Limitation: Adequate statistical figures are not available for the referred contingencies in Turkey. Therefore, elaboration of a statistical distribution for all relevant risk variables can be the subject matter of another study.

2. Contingency Approaches

Contingency theory argues that managers should adjust their leadership styles to match the situations at hand. Scott (1981: 114) summarizes the theory as the best way to organize depends on the nature of the environment to which the organization must relate. Contingency approaches to organizational structure are those which are based on the idea that the performance of an organization depends on having a structure that is appropriate to its environment.

When the business environment becomes unpredictable and many surprises occur and when the technology used alters from routine to complex, empowerment is needed. Bowen and Lawler (1992) provide a model of the main contingencies that explain why some types of organization are more likely to try to empower employees. The contingent factors in turn determine the required structure of the organization (Boddy, and Paton, 1998: 533).

Under some conditions one form of structure is more effective or efficient, while under other conditions alternative forms would be more effective. In situations of low uncertainty, programmed coordination contributes to greater effectiveness. The structural arrangements are contingent upon the situation being faced (Hall, 1996: 62).

High degree of uncertainty can only be managed by structures which enable staff to share information freely, move flexibly, and which generally encourage creativity and commitment towards a solution.
3. Marinas and the Contingency Planning

A modern marina integrates a safe and efficient waterfront with satisfying commercial and leisure activities. Marinas accommodate precious and expensive boats throughout a year and prestigious guests of high income levels, especially during summer time. Those people and their assets are so sensitive to emergencies and risks that any managerial fault in handling a contingency may result in loosing them forever. With their attractive image on the one side, and the chemicals used for the maintenance of boats in their workshops on the other, marinas are vulnerable to a number of risks.

Natural disasters such as earthquakes and heavy weather conditions may well strike a marina. Terrorism and fire are probable risks besides others. It would not be sufficient to buy only an insurance policy in respect of risk management. In order to resume operations as quickly and as smoothly as possible after a crisis while fully communicating what happened to the public, contingency planning is needed. In a previous survey, it has been found that in the companies which lacked a contingency plan, a crisis lasted 2 or 2.5 times longer than those have the plan (Fink, 1986: 66). This is an analytic, dynamic and local type of planning. It needs an interdisciplinary dialogue.

Contingency planning is composed of three stages: 1. Preparedness, 2. Response, and 3. Restoration. The first phase begins with situation analysis and identification of relevant emergencies regarding the questions of what, where, how, and how much, keeping the corporate mission and objectives in mind. Next step is establishing a databank where database is kept in order to conduct a risk analysis. Then comes the generation of scenarios which needs to be imaginative and creative. Necessary special equipment and facilities defined in the scenarios are procured and duty descriptions are made. After designation of the staff and making a communication plan, a program for training the personnel is designed and implemented. Next, scenarios are tested by implementing exercises or simulations. Then crisis management plans are detailed and written. Provisions of conformity with the local, regional and national ‘Emergency Response Plans’ is the last step of the precrisis preparation phase.

In the response phase, operations are carried out regarding the following steps. Alarming after perception and apprehension at the prodromal period is followed by communication with the contact persons. Coordination and allocation of teams and equipment by the Incident Command Center come next. After logistic activities and access to incident site; search and rescue, fire extinguishing, power supply, medical first aid, and security measures are provided simultaneously. Then assessment and evaluation are made to determine damage and temporary maintenance follow recording and reporting.

There should be a strong link between the previous phases and restoration period, because those two constitute the background for recovery and reengineering. See figure 1.

3.1. Situation Analysis and Identification of Relevant Emergencies

In order to see what the emergencies could be in the preparation stage, it would be convenient to start with classifying the risks. Turkish State Planning Organization (DPT) Disaster Committee classifies emergencies as. a) Earthquakes, b) Meteorological disasters, c) Fire, d) Technological disasters, e) Other geological disasters, f) Management failure. In this classification, technological disasters include ship wrecks and hazardous gas, oil and chemicals leakage besides nuclear accidents. Another classification has been done as follows: a) Natural disasters, b) Technological accidents, and c) Man-made disasters due to negligence.
Reasons for a crisis may be divided into two categories. In the first, external environmental factors; natural, economical, political, legal, social, and technological factors and in the second, internal factors like incompetency of the managers, firm’s life cycle, and organizational problems take place. 13 types of contingencies that can affect a marina are identified and listed below.

1) Since all of the marinas in Turkey are in the earthquake zone of the first degree, they are subjected to all the consequences of earthquakes and tsunamis which destroy not only facilities ashore but boats as well.
2) **Fire** afloat and ashore has always been a great risk in marinas. Its consequences would be very serious because of the flammable materials and vessels made of wood and fiber. Bunkering must be handled with great care.

3) **Heavy weather conditions** may well be seen in the region, especially during season changes. They may cause some wrecks, groundings, collisions, capsize and sinking of the yachts. That means loss of man and cargo over side, and a serious damage to the boats and facilities.
4) **Oil spills** afloat and ashore, chemicals spills in the yards and workshops can happen anytime in a marina. Dumping areas or inconvenient containers or tanks has always created pollution risks at considerable rates (Ferhatoglu and Kalkan, 1998). Workshops and maintenance yard are sources of waste lubricants, anti-fouling paints, grinding waste, and poisonous and acid cleansers.

5) Proximity to main routes of cargo vessels or neighboring heavy traffic and proximity to large cities may be a reason for pollution disasters which can be included in **technological disasters**.

6) **Global economic crises** may really hit tourism and yachting which has been experienced recently.

7) **Political crises** like wars, clashes and conflicts have usually been seen in the region. Some political measures and regulations to be adopted by the governments may have a negative affect on marine tourism.

8) **Increasing aquacultural activities** in the neighboring area is another risk for yachting tourism. Sharing naturally protected, safe and clean coves or shores concentrates both yachting and aquacultural activities in the region. Especially because of some illegally operated aquacultural facilities like nets or cages which are not marked on the navigation charts, the risks of accidents and pollution arise (Kisi and Tas, 1998).

9) **Terrorism** and smuggling needs a considerable attention.

10) Conflicts between the management and unions may lead to **strikes** which mean loosing money and customers.

11) Some **management inadequacies** e.g. having no contingency plans is a significant risk.

12) **Aging of infrastructure** may cause some accidents, injuries and indemnification claims.

13) **Infectious diseases** like malaria, cholera, etc have the risk of loosing customers for a season.

### 3.2. Risk Analysis

As a prerequisite for the risk analysis a database is needed. Available statistical figures about the contingencies listed above would be helpful. However, cause and effect, costs of various risks in terms of lives, natural resources and capital have been tried to be put forward in the previous section. Thus, it would be convenient to conduct a risk analysis to understand to what extent or degree each contingency can influence the firm by means of using a ‘crisis impact scale’ where

- company’s degree of resistance in case of gradually increasing pressure of a crisis,
- level of interest in the crisis to be shown by media, government and other related organizations,
- the extent of interruption of activities,
- magnitude of danger for the company’s image,
- dimensions of damage on the facilities, equipment, and the company

are taken into consideration (Tüz, 1996: 73) and a value between 0-10 is assigned for each risk.
On the other hand, estimated values of percentages for the probability of the risks should be included in the picture. To give an idea, the records of insurance companies may be taken as data base in the analysis.

3.3. Generation of Scenarios

A scenario is considerably more powerful than a set of assumptions that begin with: “Given ...” Decision makers would much rather see the outcome, and only then decide. Thus, scenario analysis is “what if ...?” analysis, with a rather large number of “if” s. (Kavrakoglu, 1990: 153). Generation of scenarios needs to be imaginative and creative but logically based on the risk analysis. Plot of the scenario will determine the need for the appliances and equipment. Types, quantities, and storing places of materials, and tools will be specified and the number and qualifications of teams and men will be determined via scenarios.

3.4. Provision of Equipment and Facilities

This is a subject matter of identification of resources and logistics; what is to be in the inventories, how much it should be in hand, where it should be kept, and how it can be transported when it is needed somewhere. In this respect, outsourcing or leaving some of them to be provided by the public services can be considered. Nevertheless, intervening most of the contingencies locally at the initial stages would save time and money, even more important of all, lives. For every type of contingencies listed above in this study, specially designed equipment is needed. There are detailed lists of such equipment. For instance, for oil spill emergencies, a selected range of pollution control equipment is required (Taspinar, 1995):

- Multipurpose oil skimmer system (MPOSS),
- Pump skimmer,
- Hand skimmer,
- Suction heads,
- Collapsible tanks,
- Oil boom,
- Oil spill test kit,
- and foam or other chemicals for decomposition.

Moreover, oily water reception facilities and separators are compulsory for the marinas according to international conventions and rules adopted by Marine Environment Protection Committee (MEPC). On the other hand, Waste Management concept plays an important role in marina management. Garbage must be splitted and stored in accordance with its characteristics, especially those recycled, so some specific containers which do not permit drainage are needed. Every container or tank must be marked very clearly.

Outsourcing can save money, because marina operator does not have to hire additional staff to perform some functions like security, health care, fire fighting, yard keeping, data processing, garbage collecting, cleaning, maintenance and bunkering. All those tasks can be performed by vendors with a high quality under the strict control of the marina management.
3.5. Task Descriptions and Designation of Responsible Staff

In an emergency, there will be extraordinary duties. Authority and responsibilities of every position are described in advance. Information on and introduction of shore based response activities are given at this step. A qualified individual is designated as 'responsible leader' and lists of contact persons are made together with a communication plan. Empowerment of the staff is a characteristic of the crisis period.

3.6. Staff Training and Scenario Testing

Some on-the-job training programs are specially designed to teach personnel what to do, whom to contact and where to go in an emergency. Such programs are supported by some exercises by which the scenarios are also tested in terms of costs, parameters, and applicability. Not only personnel but also the users or residents of the marina will be able to overcome panics and undesirable attitudes by involving volunteers in the exercises. All the experiences, failures, misconduct, negligence, violations of safety must be recorded and reported referring to operating regulations at the end of an exercise.

3.7. Crisis Management Plan

Since crises threaten the strategic objectives of the marina organization, crisis management should work under the foresight of strategic management (Tüz, 1996: 76). Crisis management plan aims the coordination of communication, grasping, action plans, media criticism, and decisions. The priority is on the control of crisis. Response should be in time and efficient.

The plan includes objectives, priorities of protection and saving, sensitivity chart which depicts risk areas and levels for the marina with its environment, categorizing action levels, coordination and collaboration with other organizations, warning and monitoring systems, and designing an organization for intervention. An incident command system (ICS) is developed where the incident command organization has been described in terms of ‘command, planning, logistics, operation and finance’ (http://www.env.gov.bc.ca).

In the spotlight of the results and experiences gained in the exercises, some fine tunings should be made and procedures and instructions are written with a simple and explicit wording. Relevant instructions are put up as notices supported by figures and symbols in proper places for the attention of staff, residents and guests.

At the last step of preparedness, crisis management plan should be checked for the conformity with the national and international rules, regulations and conventions like SOLAS, MARPOL 73/78, OPRC 90 and national emergency response plans. The regulations which have been adopted by Marine Environment Protection Committee (MEPC) have to be considered for facilitating the intervention to incidents.

4. Response to Emergencies

To be prepared and organized for the emergencies in advance will avail the managers to cope with them efficiently in a shorter period. Timeliness and efficiency in the response stage have to be emphasized. A reliable communication system, logistics, and coordination are of vital importance in the respect of search and rescue, early interference and extinguishing. Damage assessment and reporting will constitute the basis of restoration and restructuring. For an appropriate response to marina emergencies e.g. pollution incidents, it is necessary to develop and establish a pertinent response organization and contingency plans on a national, regional and local levels.
4.1. Assessment of Crisis Impact Value

Crisis Impact Value (CIV) can be measured by using a two-dimensional diagram of ‘Crisis Barometer’ (Figure 2) which combines ‘Crisis Impact Scale’ as the vertical axis, and a horizontal axis which stands for the probability percentage of the crisis (Regester, 1984)

![Figure 2. Crisis Barometer](image)

| High / Low | 10  |
| YELLOW ZONE | 9   |
|            | 8   |
|            | 7   |
|            | 6   |
|            | 5   |
| 0 10 20 30 40 50 | 60 70 80 90 100 |
| GREEN ZONE | 4   |
| Low / Low | 3   |
|            | 2   |
|            | 1   |
|            | GREY ZONE |
|            | Low / High |

Source: Tüz, (1996)

When the 13 contingencies listed in this study for marinas in Turkey considered, the distribution of CIVs on the diagram can be as follows:

**RED ZONE:**
- Fire
- Oil and Chemicals spills
- Earthquake and Tsunami
- Technological disasters (in Istanbul)
- Meteorological disasters

**YELLOW ZONE:**
- Global economic crises
- Technological disasters (others)
- Terrorism
- Management inadequacies

**GREY ZONE:**
- Political crises
- Aquaculture

**GREEN ZONE:**
- Infectious diseases
- Strikes
- Aging of the facilities

5. The Decision Making Process

Every decision situation has a risk to some extent in respect of acquiring required information or probability of failure (Eren, 1998: 134). Decision making process under different circumstances can be studied according to ambiguity, risk, and deterministic conditions. Abundance of variables arises the problem of uncertainty. The decisions taken should be updated and revised from time to time and some surveys or studies should be carried out in order to meet the new information needs.
In the first phase of the contingency planning which covers the preparation period, the information is incomplete, goals may be unclear therefore, decision is made under ambiguity. That is why imaginative and talented managers who have vision are needed. In the second and acute phase, decision is made under risk. The goals are well defined, information is fully available and there are stochastic variables and outcomes. In the third phase which is for restoration, decisions are made under deterministic conditions. The goals are well defined, information is fully available and there are deterministic variables and outcomes. In such programmable decisions, having the rules set, decision making may be delegated to subordinates. Therefore, restoration period is a matter of operational planning and may be out of the scope of contingency planning.

6. Conclusion

Marina contingency planning process will need to take into account some or all of the following factors:

- Type and size of boats using the marina
- New industries established in adjacent areas
- Changes in the international and national regulatory environment
- Aging of the marina infrastructure
- Recent waterfront development
- Changes in response equipment technology and availability
- Logistics
- Identification of human and natural resources
- Trends in political climate and global economy

An assessment will also be needed on the ability of the marina to respond to the following types of emergencies: Fire, natural disasters, chemical and oil spills, collision, capsize or sinking, and loss of man.
Preparedness, response, and restoration should be integrated and those concepts must be taken as the components in the contingency planning. An effective response will need a specific organization with special equipment and defined responsibilities and leadership. All the recorded data and reports of the response activity will form the background for a successful recovery. A contingency plan has to be updated within a certain period, otherwise it can be a barrier rather than an aid to effective response.

References