Value Engineering Change Proposal
Of Irrigation and Drainage Networks in
Ramhormoz - Iran

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$100 \text{ m Saving of modifying Design flood in a Dredging Project of Karun River}

Introduction
Third development block

General Plan

14 units

Gross area 5588 hectares

Net area about 5000 hectares
Main climatic characteristics

- Annual average rainfall = 305 mm
- Absolute maximum temp = 52.8 celcius
- Absolute minimum temp = -2.3 celcius
- Average annual evapotranspiration = 1775 mm
Value Engineering Team Members

Knowledge Iceberg

**LIFE APPROACH**
- Trial & Error
- Apprenticeship
- Experience

**LEARNING SOLUTIONS**
- Training
- Best Practices
- Experiential Learning

![Knowledge Iceberg Diagram](image)
Site Visit
FAST Diagram

Brain Storming Session
# List of VE Proposals

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Change in lateral alignment according to the natural slope

**Layout of subsurface drains (Base Case)**

- Lateral spacing = 80 m
- Lateral length = 500 m
- Pipe collector spacing = 80 m
- Number of collectors = 8
- Lateral diameter = 100 and 125 mm
- Collector diameter = 160 and 300 mm

**Layout of subsurface drains (Proposed Case)**

- Lateral spacing = 100 m
- Lateral length = 1000 m
- Pipe collector: no needed
- Lateral diameter = 100 and 125 mm
Benefits of proposed modification:

➢ Use of the natural slope
➢ Constant drain depth along the lateral
➢ Lower sedimentation because of steeper slope
➢ No need for any type of collectors
➢ Lesser land loss
Benefits of alteration of the direction of lateral drains were:

- Cost Saving of 23 billion Rials (about 0.9 million USD)
- No need for any type of collector drains;
- Constant depth of the laterals;
- Lower sedimentation risk in the drains because of higher water velocity; and
- Easier maintenance.

Conclusion

This was an example to show that VE can make it possible to reduce the cost and/or increase the productivity of a project.

In this case the saving due to all proposals was estimated to be 80 billion Rials (3.2 million USD).