EVALUATION OF DECONSTRUCTION, RECONSTRUCTION AND RETROFITTING NATIONAL PLAN FOR SCHOOLS

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Iran is located over a land with high potential for seismic activities and has a history of several strong earthquakes that caused extensive damage and destruction. A series of activities were introduced under supervision of Management and Planning Organization titled as Retrofitting Plan for Important State Buildings and Infrastructures in 2000. Since 2006, and based on the 4th National Development Plan, a budget of 4 billion dollars was allocated for destruction, reconstruction and retrofitting of schools that suffered from weak stability condition and were life threatening during earthquakes. The plan was introduced for 4 years and extended for 5 more years.

This paper looks into an eight- year- experience regarding implementation of this plan by introducing a dynamic and comprehensive evaluation model. The project management system of School's Renovation, Development and Mobilization Organization was used as the main source of information. Moreover, different bodies and figures associated with the plan were interviewed while a number of field studies were also carried out to acquire available data for estimation of the plan.

An evaluation model was selected and defined based on analysis carried out on the acquired data. At the end, final indices were defined and the plan was evaluated with cooperation of the project' s Technical Committee. A primary model was defined based on acquired documents. Indices for the model were defined based on the objectives, vision, tasks, main goals, basic actions and strategies of the plan.

Three sets of indices were introduced as follows:
- Success of the plan in the planning process and providing primary requirements.
- Success of the plan in handling over standard, safe and equipped educational spaces.
- Success of the plan in defining and submitting technical regulations.

These indicators are shown in Tables 1 to 3

Table 1. The titles of the main indicators in first frame

Number	Success of the plan in the planning process and providing primary requirements
F1	☑ The Ratio of legal and planed budget
F2	☑ The Ratio of costed value and legal budget
F3	☑ The correct allocation of budget to the provinces (satisfaction of the budgeting process)
F4	☑ The correct allocation of budget to retrofit , destruction and reconstruction

Table 2. The titles of the main indicators in second frame

Number	Success of the plan in handling over standard, safe and equipped educational spaces
F5	☑ Progress percentage based on the number of classes
F6	☑ Increase in the number of students in a safe environment
F7	☑ The success rate in achieving the standards of facilities in schools
F8	☑ The success rate in achieving the standards of interior design in delivered schools
F9	☑ Reduction in schools maintenance in terms of the standards of learning spaces
F10	☑ The energy saving education and the use of modern technology

Table 3. The titles of the main indicators in third frame

Number	Success of the plan in defining and submitting technical regulations
F11	☑ The increasing number of regulations, made as a result of the implementation.
F12	☑ Satisfaction with the performance of technical and administrative regulations.

A set of secondary indices were also introduced to cover marginal effects and achievements. In fact, these indices are important to assess the success of the plan but they are not independently under the influence of the plan and there are many external factors which have affected their quality. Therefore, these indices are given lower degree of effect in assessing success of the plan. These indicators are presented in the following:

1) The number new of emerged consulting firms and contractors.
2) Hours of training experts and their knowledge of the methods of retrofitting and renovation.
3) Engineers increase in engineers employment through destruction, reconstruction and retrofit process.
4) Increase the efficiency of contractors.
5) Project" s success in identifying and training local consultants and contractors.

Having set the indices, it is necessary for them to be properly weighed. Weighing in the indices, which we've been looking at this as a good indice reflects the expectations of the assessment. The weights depend on of the inherent nature of their concept and the success of the project and each of the indices in order to fulfill the objectives and strategies of the plan is the basis of points allocated according to the experts. Therefore, in this study, 13 main indices and 17 secondary indices using data collected from the project management system of school's renovation, development and mobilization organization and field studies (inventory). So that the score of each indice from top rated dedicated achieved.

Having aggregated collected information, the final result is obtained from the analysis of three indices "planning process and providing primary requirements", "handling over standard, safe and equipped educational spaces", "defining and submitting technical regulations that can be used as an index to evaluate the proposed destruction, reconstruction and retrofitting schools". The following image shows the index.
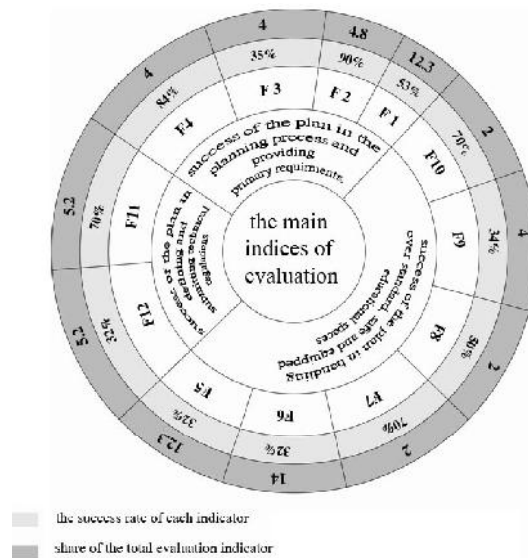

Figure 1. The final analysis of the main indices

The evaluation of the destruction and reconstruction and retrofitting of schools risk based on the methodology of this study has been rated 47 of 100.

REFERENCES

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