Figure 4.7 shows that 76 of respondents agreed that there was an impact of school sensitization workshops.

**Figure 4.7: Responses for impact of the SSW on children**

Out of the various questions such as basics of earthquake, first aid operation, prevention of safety measure, do’s and don’ts of earthquake, rescue and search, fire safety norms to check the enhancement of awareness and knowledge of children it was found that 47% children had awareness regarding the dos and don’ts during the earthquake. On the other hand it was surprising to learn that none of them had enhanced their knowledge in fields of fire safety norms and rescue and search (Figure 4.8) operation.

**Figure 4.8: Knowledge enhanced by SSW**

**4.2.5 Achievement of Project Objectives**

It was found that 59% of stakeholders felt that the project to a good extent has been able to develop the understanding of the masses about the concept of the direct and indirect consequences of earthquakes and also regarding the interdepartmental and interstate coordination during the time of earthquakes. Figure 4.9 reflects that 63% respondents expressed some doubts in relation to the assessment multistate preparedness.

**Figure 4.9: Achievement of the objectives of the project.**

The response analysis of primary interaction with the concerned stakeholders of Tripura and Manipur is presented Figure 4.10 depicts the: level of achievement of objectives of the programs

100% stakeholders of Tripura and Manipur were of the view that objectives of the CDP program were met. The project has achieved its objectives in terms of generating awareness, increasing the understanding level of the people about high intensity earthquakes and multi-state preparedness. 33% had doubts regarding the concept of state District Management Plans and gap identification.

**Figure 4.10: Achievement of the objectives of the project (Tripura and Manipur)**

50% of the stakeholders of Manipur and Tripura SDMA as shown in the figure 4.10, felt it was extremely relevant for the future earthquake related works. The same response pattern was observed (Figure 4.11) when asked about the relevancy of the program for their knowledge enhancement about earthquakes and its impact. Regarding their present work on earthquake preparedness and mitigation 50% of the participants found it very relevant.

**Figure: 4.11 Responses w.r.t to the relevancy of the CDP**

**4.2.6 Knowledge Enhancement**

As shown in the figure 4.12, 100% of the participants of Manipur and Tripura SDMA agreed that the CDP helped in enhancing the understanding of the stakeholders regarding the earthquakes and the precautions to be taken. 83% felt that the programs helped in enhancing their knowledge about SDMA functioning and understanding the State Disaster management Plan.

**Figure: 4.12 Knowledge enhancement through trainings**

**4.2.7 Program design**

80% of the participants of Manipur and Tripura SDMA felt that the program was very well oriented to practical problems 67% agreed that the program covered the area and subject to a good extent. Regarding the component wise time distribution 67% of them felt that it was covered to good extent and 33% of them had doubts as shown in the figure 4.13 below.

**Figure: 4.13 Program Design**

**4.2.8 Effectiveness of the IRS program**

80% of the participants of Manipur and Tripura SDMA agreed that the IRS program helped then to review and evaluate the emergency response plans and Standard Operating Procedure (SOPs). Whereas 80% had doubts about incorporating the concept of IRS. 67% of the participants felt that the IRS program helped them to review and evaluate the roles and responsibilities of the concerned stakeholders. . The responses are depicted in the Figure 4.14 below.

**Figure: 4.14 Effectiveness of the IRS program**

**4.2.9 Training Design**

67% of the participants of Tripura and Manipur SDMA felt that the area and subject coverage of the training was very good only 33% rated it excellent. 67% Participants felt that the time distribution amongst various components of the course and trainings orientation to the practical problems was very good as depicted in the figure 4.15 below.

**Figure: 4.15 Training Designs**

**4.2.10 Training Methods**

As shown in figure 4.16 50% of the participants of Manipur and Tripura SDMA felt that the discussions , lectures and presentations of the training was excellent and 50% felt that the *on-site* survey exercises, training manual and filed exercises were very good.

**Figure: 4.16Training Methods**

CONCLUSION AND WAY FORWARD

It is beyond doubt that the project is one of the most dynamic initiative taken up by NDMA to develop an earthquake disaster scenario. The collaboration of NDMA with CSIR NEIST is *akin* to cherry on the cake. The project catered to the eight NE states. The intensity of > IX shall be felt over Meghalaya, intensity of IX-VIII will be felt over Sikkim and most parts of Tripura whereas intensity of VIII-VII to be felt in Arunachal Pradesh, Nagaland and Mizoram.

The project has enthused a lot of hope and expectation as this was placed in the hands of experts of a premier institution of the country. The objective of the project was very ambitious. The evaluation and analysis of the findings marked as outcome of the project is just an inception in a long journey which should be pursued till the end and in the process filling up all the gaps and loopholes.

The activities carried out in the course of project duration of 18 months are evolved on *real time* basis and most of them were very significant such as Capacity Development Programs, Mass Media Campaigns, Rapid Visual Surveys, School Children Sensitization, Table Top Exercise and Mega Mock Exercise. The project was very successful as it looped in all major stakeholders, although due to paucity of time, delays in release of funds there are a few gaps which should be plugged-in in future ventures.

The project was able to sensitize the concerned states and district administrators. However still a lot of capacity development need has to be catered to. The IIPA team in its interaction with the project investigation team at CSIR-NEIST found that there were a few gaps which are mentioned below:

**Grooming states as Future ambassadors**

It is beyond doubt that NDMA has conducted the Mega Mock Exercises successfully .IIPA’s study team interaction found that all the activities related to Mega Mock Exercises were conducted by NDMA. It is to be emphasized that states are also made a party in conducting these exercises both administratively and financially this would lead to prepare a strengthened state. Such state capacitate would pay way and the state may have the potential to pose as a future ambassador

**Capacitating and disseminating scientific knowledge generated by CSIR-NEIST**: It was also observed that the capacity building should have been two -pronged .One, capacitate NEIST and the second prong should have been disseminating scientific knowledge to NDMA for all awareness generation activities. The real-time earthquake prediction scenario and the mirror image generated by CSIR-NEIST should have been shared with the concerned states as discussed in the consultative meet held at ASDMA.

**Institutional understanding between NDMA and CSIR- NEIST:** The release of funds was a constraint .The closing of Police modernization scheme led to unattended residual liabilities under the ODMP. As a result the timely release of funds were hampered.

**Overspending of funds by few states:** On discussion it was found that there was overspending of funds which over shot the earmarked allocated funds for the pre-preparatory activities which led to issues in settling the finances. Some states such as Tripura are yet to submit the expenditure statement of the funds utilized. It was observed by IIPA’s study team on discussion with the project investigator that states of Meghalaya, Assam, Sikkim were very cooperative whereas Tripura, Nagaland and Arunachal Pradesh had an indolent attitude.

**Handholding and Sustainability efforts**: Throwing a glance at affirmatives, this project has generated a lot of mass awareness and sensitization amongst the masses. The technicalities such as micro-zonation of seismic activities have also been brought forward. Several new programs such as “*GyanJyoti”* program an initiative of Assam Government, and “Science Motivation Programme”, a CSIR initiative have been started as an inspiration from this mega project. The discussion and consultative meeting of IIPA study team brought to light the sound coordination between the SEOC and DEOC. There was a general enthusiasm and willingness to learn despite the State and General Elections in a few states. The overall coordination between different line departments was at its best during the mega mock exercises. It is thus strongly recommended that mock drills must be conducted on a routine basis and the states should be so well equipped that they may perform it on their own without the financial support of the centre. The most appropriate example to quote for this is the case of Sikkim State where such mock drills take place as a routine activity

**Regular re-visits of Disaster management Plans**: It was observed after discussion that there was an urgent need for trained police personnel in Disaster Management. Disaster Management Plans are obsolete and there is need to revisit them and remove the redundancy from them. The inventory of resources was also a major issue as it was not complete in most cases. Disaster Management Plans should be regularly updated with resource/inventories mapping. IRS guidelines should also be a part and parcel of the plans. There should be a provision to place Web based DSS

**Provisioning for Procurement of updated DM Equipment**: There is a lack of Disaster Management equipment with different line departments such as foam tenders, mist technology, wood driller, inflators lighting covers, high rise ladders, air lifting bags, pumping set, these equipment should be procured at the earliest. Moreover apart from procuring and maintaining the DM equipment there should be proper training of the manpower to operate them.

**Wider outreach of Scientific Findings**: State governments and related agencies must make the relevant date accessible to the teams engaged in developing such hypothetical scenarios. The project would be extremely beneficial in generating awareness amongst the stakeholders about an earthquake of high magnitude in all the eight NE states. The loss to life and property can be minimized by incorporating the knowledge developed in this project in the relevant disaster management prepared plans of the states. All major stakeholder groups, leaders and policy makers, engineers and architects, disaster management professionals, and people at large will benefit from the knowledge developed during the project.

The outputs from the project will be useful for NDMA, NIDM, several Committees working on earthquake mitigation, architects and engineers, insurance agencies, people involved in land use planning, and in various aspects of public and financial policies dealing with multi state earthquake disaster preparedness and emergency planning and management.

**Ease of availability of Building Code**: The building codes must be available in public domain. Census report must also incorporate building roof walls, number of storey as this will equip in better understanding of the vulnerability and will further enhance the dimensions of RVS. The RVS of all critical life line buildings followed by other government and private buildings should be taken up as an urgent step.

**Need to enhance Medical capacity and capability** As far as medical capacity is concerned despite the fact which came out after discussion with CMO, Guwahati that a lot of activities are conducted to make the medical and paramedical fully equipped during emergency situations. Still there is need to enhance medical capacity and capability. The emergency plans of the hospitals must be in place. On the basis of information provided by CSIR-NEIST project investigator, IIPA study team felt that for given deliverables funds allocated in the project were adequate and utilized in a prudent manner under well-structured heads.

Special strengthening in the following realms is required in the following sections.

1. Effective pre-planning between the sponsoring agency and host agency
2. More involvement of private and other educational institutes in the activities on a regular basis.
3. Adoption of bottom up approach in planning all activities and exercises to ensure maximum participation and full coordination for best possible results
4. To conduct a full scale city wise analysis of all NE states. Nagaland and Meghalaya have already approved CSIR-NEIST for a full scan to be better prepared.

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**ANNEXURES**