



UNJP/VIE/037/UNJ

“Strengthening Capacities to Enhance Coordinated and Integrated Disaster Risk Reduction Actions and Adaptation to Climate Change in Agriculture in the Northern Mountain Regions of Viet Nam”



Effective Database Management System Development Report

Hanoi, 2011

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1. INTRODUCTION

Vietnam is one of the five countries most strongly affected by the natural disasters and climate change. The extreme phenomena have been growing including storms, floods, droughts, forest fires, etc. The impacts of disasters and climate change have been definitely a threat to the poverty reduction and sustainable development. Agriculture is an important sector and contributes a big share for the national economy. It has played a significant role in employment creation and poverty reduction. However, the agriculture activities are most usually affected from the natural disasters especially in most vulnerable areas including northern mountainous areas. The storms and floods happened and caused the worst impacts for Phu Tho, Yen Bai and Lao Cai Provinces in 2008.

With the Project of “Strengthening Capacities to Enhance Coordinated and Integrated Disaster Risk Reduction Actions and Adaptation to Climate Change in Agriculture in the Northern Mountain Regions of Viet Nam”, FAO and other UN agencies are committed to support to strengthen the institutional systems and processes for disaster risk reduction and preparedness in order to reduce vulnerability to climate extremes and strengthen resilience to climate change impacts. One of the project initiatives is to develop and pilot a disaster database management system in agriculture sector (called VietInfo) to improve the DRR and ACC more effectively in Phu Tho, Yen Bai and Lao Cai provinces.

The data-base system has been developed as an “information-pool” containing reliable disaster data in agriculture sector, including agriculture-based natural disaster (and gender sensitive) information from all sectors relevant to DRR and ACC. The data base consisted of statistical data. The data base management ranged from the compilation of different data bodies from the various sectoral departments and levels and its integration into a common digital data base. The capacities of data analyse and monitor and evaluation of impacts of natural disasters in agricultural and food security were provided for the staff at different levels but still limited. The people who involved in the process of developing the database highly appreciated its importance and necessity for their work.

In conclusion, the values and the benefits of the disaster database management system in agriculture sector are recognized by the local authorities and the local staff. However, there are some shortcomings to be improved including lacking of computers for the key stakeholders, a mechanism of database management and operation, etc. It's advised that the database, Vietinfo, should continue to apply in the provinces in coming years. The basic conditions for a database must be ensured, especially good institutional settings and necessary equipments for running the database software. The report is organized in four sections. Following this introductory part, the part of implemented results is mentioned. The third part is the achievements. The fourth section attempts to identify the shortcomings to be paid attention to the coming time. The last section provides some recommendations towards the improvements of sustainability and effectiveness of database management systems in the three piloting provinces: Phu Tho, Yen Bai and Lao Cai. My consultancy work took several months and I am indebted to the people and organizations that supported me along way. On this occasion, I would like to express sincerely thanks to Mr. Vu Ngoc Tien, Assistant FAO Representative, Ms. Cristina Bentivoglio, Former Programme Officer, Mr. Ho Dang Hoa, Programme Officer and the director and staff of National Project Management Unit for providing valuable support to my work in the project UNJPVIE037UNJ. I also wish to greatly thank Ms. Nguyen Bich Ngoc, Vietinfo focal point, Planning and Social Policy Section, UNICEF for assisting me in technical issues relating to Vietinfo development and exchanging information. My sincere thanks go to the Project Coordinators in Phu Tho, Yen Bai and Lao Cai provinces for organizing the project activities as well as the support and participation of the provincial partners.

2. IMPLEMENTED RESULTS

Some activities were carried out to achieve the project’s expected outputs. It was advised to carry out a survey on assessment of current situation of disaster data management in agriculture sector. The survey was conducted in the project’s areas (Phu Tho, Yen Bai and Lao Cai provinces) with participation of governmental staff at provincial district and communal level and villages’ heads in April. 93 people (including 23 provincial staff, 9 district staff, 37 commune staff and 25 village heads) involved in the survey. The survey’s results were considered as a basis for finding out the weaknesses and strengths to propose recommendations for improvements of the database management system. The main findings of the disaster data management in agriculture were discovered as follows:

Strengths:

- The wealth of data collected at commune level and stored at district offices is therefore only potentially very useful for analysis, planning, and monitoring and evaluation of DRR and ACC.
- The data base management skills and capacities (GIS format) very valuable for situational analysis, monitoring and planning at DoNREs are undoubtedly a very valuable asset of the provincial agencies.
- Referring to post-disaster data, the data collection systems in the three piloting provinces are quite good and well-organized with a network from the province down to communes. The data collection and communication is carried out according to the CCFSC system. There is a good coordination in data collection and communication.

Weaknesses:

- Weak data collection capacities, especially assessment/calculation of damage and losses at commune level as a problem for data collection, due to very few and sporadic trainings.
- The disaster data/information still exist parallel two systems, the statistic sector and CCFSC. The two information systems are quite homogeneous. But some indicators of them are different. The disaster data is mainly collected for the reoccurring disasters in Viet Nam like flood, storms, landslides, forest fire
- Capacity of analysis, monitoring and assessment at district and communal levels is still limited.
- Data collection in communes, as well as the way of data recording (paper file by individual staff with their own way, mainly in paper or individual notebook at communal level) varies considerably among the different sectoral departments. The resulting differences in the extent and aggregation of the collected data, as well as in the respective data quality and reliability lead to inconsistencies of the same information collected by different sectoral branches.
- There is no “information pool” in the provinces containing all related data that agencies need for their monitoring and analysis and evaluation of disaster risk management. Data is everywhere and plenty but sometimes for certain purpose, the information needs are not available.
- The paper records are unpractical for a comprehensive analysis, evidence-based decision making, monitoring and evaluation while such data entered and systematically integrated into a computer-based information system would dramatically increase the actual usefulness of the existing data.

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- The limited technical and infrastructural capacities, i.e. knowledge and training of staff in the usage of computers and the relevant software, as well as the lack of respective equipment, are a major bottleneck for the development of such an information system.
- Another weakness is the personnel change in the communes that negatively impacts on the data management.

After the survey, the essential activities were proposed for improving the current situation of disaster database management system in agriculture sector. In consideration to the project's available resources and time frame, only 6 districts (2/province) and 6 communes (1/district) were selected as piloting areas (Minh Hac commune - Ha Hoa district and Chan Mong - Doan Hung in Phu Tho; Dai Phac - Van Yen and Yen Binh - Yen Binh District in Yen Bai; Muong Vi - Bat Xat and Son Hai - Bao Thang in Lao Cai). Only some most necessary activities were carried out.

In order to improve the weakness of the parallel existence of 2 information management systems, the 3 workshops on introduction of Vietinfo and identification of indicators were implemented in Phu Tho, Yen Bai and Lao Cai provinces in July. The workshop aims to (1) raise a common awareness of and comprehensive and precise understanding on content and utilities of Vietinfo in disaster risk management (DRM) and adaptation to climate change (ACC), and (2) identify necessary information needs to set up a common database system for disaster risk management and adaptation to climate change. The total number of participants was 71 staff (21 in Lao Cai, 29 in Yen Bai and 21 in Phu Tho), in which the number of women took 15.4%. 50% of the total participants were district and communal officers and the rest were provincial officers. The participants discussed about the information needs of disasters' damages and losses basing on the DANA indicators. The identified disaster indicators by the 3 provinces are more specific and practical for reporting to the higher levels by the local governments. However, it's assessed that the list is too much.

For pre-disaster information, the oriented sectors (livelihoods relating to agriculture sector, population and labour, natural resources, hydrometeorology, economy) were focused for the local management, planning, disaster damage calculation/estimation, response and decision-making for DRM. Gender sensitive data and vulnerable groups (women, children and elderly persons) were taken into consideration.

After the workshops, the list of indicators of disasters' damages and losses and pre-disaster was developed basing on the results of groups' discussions. The list consists of over 450 indicators. It was also sent back to the provinces for comments and feeding backs. The related provincial departments agreed on it. The indicators were developed in compliance with the government's guidelines.

Designing data collection forms: after the workshop on identification of indicators, the data collection forms were designed for data collection. There are 2 forms, including one form of disasters' damages and losses and one of agriculture and other sectors.

Disaster data and data of agriculture and other sectors in 3 piloting provinces (at 3 levels: provincial, district (2 districts/province) and communal (1 commune/district) were collected in accordance with the designed forms. The related stakeholders completed the data collection a little bit late in comparison with the deadline. Most of the pre-disaster data, like agriculture, population and labour, natural resources, hydrometeorology, economy, collected sufficiently for 4 years (2006 – 2009). But for disaster data (losses and damages), there are still a lot of data missing.

One training course on use and administration of Vietinfo was conducted on 15 – 18 November 2010 with the participants from DARD, DONRE, Provincial Statistics Office, District Section of ARD, and District Statistics Section from 3 provinces, and 2 piloting

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communes in Bat Xat and Bao Thang districts (Lao Cai province). Before organizing the course, it's very important to receive the technical support from UNICEF. The total number of trainees was 31 (13% women). The training objectives were to (1) Introduce the features of VietInfo (VI) version 6.0 for application of VI in disaster risk management, planning, response and recovery, and damages/losses estimation; (2) Provide instructions on use and administrate the Vietinfo database for the provincial and district staff from 3 piloting provinces (Phu Tho, Yen Bai and Lao Cai) who are in charge of or relating to disaster risk management.

The trainees were equipped with skills of use and administration of Vietinfo. The training course achieved the results as expected. The trainees had a good assessment of the course. Almost of the trainees said that they were able to use and administrate Vietinfo (71.7% of the trainees: good at administrating the database; 67.7%: good at using the database). After the course, the trainees were asked to continue updating the data to ensure the provincial ownership and the database's sustainability.

In addition, the trainees were provided with instruction of using and analyzing the data in DRR and ACC in agriculture sector. But due to limited time, they had little time for practicing the data use and analysis.

3. GENERAL ASSESSMENT

1.1 Achievements

In general, the activities of the Output 3.1 (Output 3) have achieved the expected outcomes. Some main achievements have been reached as follows:

- The related stakeholders at 3 levels in piloting provinces have been enhanced awareness of importance and necessity of information/data and disaster risk management and adaptation to climate change.
- A list of indicators of disasters’ damages and losses and livelihoods was identified and developed for the local management, planning, disaster damage calculation/estimation, response and decision-making for DRM. A system of forms for data collection was designed and delivered to the provinces for collecting data.
- The related agencies at provincial, district and communal levels carried out the data collection of disasters’ damages and losses and livelihoods (relating to agriculture, population, labor, etc.). These data have been updated in Vietinfo by the local agencies.
- The capacities and skills of use and administration of Vietinfo, disaster database in agriculture sector, of the provincial and district levels’ staff have been strengthened. The participants showed their interests in the database software, Vietinfo. It’s showed that the database software is very useful for their disaster management and adaptation to climate change. Now, the related stakeholders at provincial and district level can manage and use the Vietinfo.

1.2 Shortcomings

During implementation of the output, some following shortcomings need to be improved.

- The progress of implementation of the Output 3.1’s activities is late compared with the plan. The budget in the prodoc was not estimated for some proposed activities (like workshops on identification of indicators, data collection). Therefore, it took much time for budget approval from the headquarters (2 – 3 weeks).
- The project beneficiaries were still limited due to the limited budget and project timeframe. Only few participants could attend the training course on use and administration of Vietinfo and also the coming activities.
- The effectiveness and sustainability of the output are low because necessary conditions have not been ensured. In order to ensure the success and sustainability of a database in the future, following conditions should be met:
 - (1) Stable and capable personnel. Database management staff must be stable and not changed many times. If not, it takes time and money for training the new staff. The staffs are capable enough for managing, operating and using the software (at least good at WORD, EXCEL, and POWERPOINT).
 - (2) Mechanism of use and management of database. The database management should be institutionalized by a decision or any legal document issued by the local authority. This enables the staff involving in the database management take more responsible for the database management (data collection, updating). The database management and use will become one of the agencies’ regular tasks.

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- (3) Good and strong hardware and facilities (like computers, printers, internet, etc. must be enough configurations for running the software for Vietinfo in this case).
- (4) Good software. The software must be friendly for the users, easy to manage and suitable for the practical work.

Basically, the first (friendly software) and forth (stable personnel) conditions have been basically achieved. The Vietinfo is a software that is very easy to use and manage and friendly because its interface is Vietnamese and linked with the Microsoft Office software like WORD, EXCEL, POWERPOINT. When the users and managers are familiar with these software, they can use and manage it. The consultant suggested some criterias for selecting trainees. And the piloting provinces carefully appointed the staffs participating in the process of the database management and development as the consultant's recommendations. According to the results of the training course on Vietinfo administration and use, the trainees were completely capable for operating and administrating the database and quite stable because they are young and good at computer skills. They are quite stable with their current work and position. They should be assigned for taking responsibilities of database management.

However, because the second (institutional settings) and third (hardware) conditions have not been completely met yet, the database management and development will not be sustainable. There is no mechanism yet in the 3 piloting provinces. This condition is perceived as the most important one for the database management and development. It can create a “playground” in which develop roles and functions, rights and obligations for each stakeholder and coordination among the stakeholders. In fact, such institutional settings have not been identified and taken into account during the project implementation. Consequently, when the project ends, the follow-up activities may not be concerned and maintained by the stakeholders. The third condition is a necessary one that the facilities must be provided for developing and updating the database from the beginning but the facilities like computers are both insufficient and low quality. The computers are not enough for running the database software in terms of configuration, quality and quantity in 3 levels in 3 piloting provinces. According to the results of the survey on assessment of current situation of disaster data management in agriculture sector, there were few computers that can stall and run Vietinfo in the provincial and district departments. It was observed that there was no computer in the surveyed communes that could run the database software. Thus, the staff would not have any opportunity or have very few chances to practice and update the data. Consequently, they will forget the new skills and techniques that were provided in the courses after one or two months.

- The manual on database administration for the database managers and the manual on database use for the users have not been translated into Vietnamese yet. It's not able to use the Vietinfo for the people who don't know English and did not take part in the trainings in the provinces. And it's not easy for the trainees to manage and operate the database without detailed instructions if they do not regularly practice it.
- The capacity of the stakeholders in using the data in disaster management and adaptation to climate change is still limited. It's assessed that the capacity of data analysis of the participants in the activities was weak. The data analysis and use in disaster risk management and adaptation to climate change, monitoring and evaluation were only one small part of the course and workshops. The consultant mainly introduced how to use and analysis some data and the participants practiced few exercises due to limited time.

4. RECOMMENDATIONS

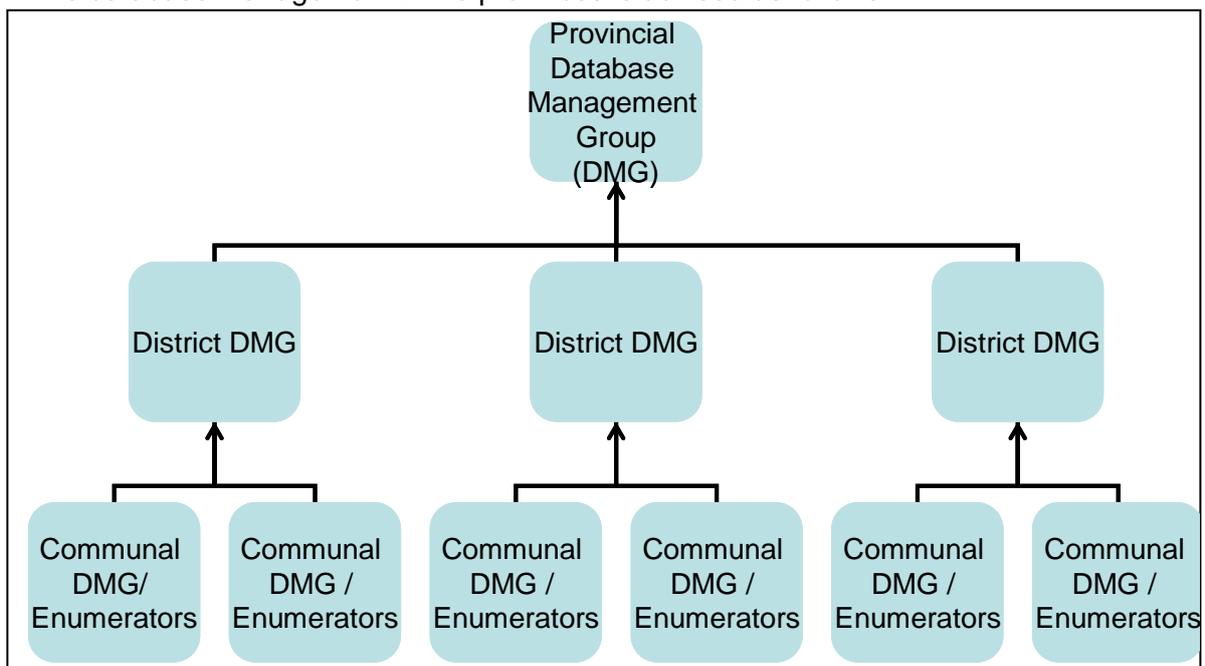
With the meaning and usefulness of Vietinfo database in DRR and ACC, it is recommended that the database should continue to apply and replicate in the three provinces. There are some benefits in applying it. Firstly, it is assessed that Vietinfo has many utilities and is considered as a supporting tool for evidence-based decision making, planning, monitoring and evaluation for DRR and ACC. Secondly, Vietinfo is free software funded by the UN and also updated to fit with the new technologies of Microsoft. Thirdly, it's very easy to use and manage because it is designed to integrate with the Microsoft Office. And it is customized a Vietnamese interface. It is suitable with the local staff. In order to further improve the efficiency and sustainability of Vietinfo database management system in the 3 piloting provinces, it is necessary to pay more attention to some following issues in long and short terms:

Computer provision: Computers should be equipped for the responsible agencies at levels (province, district and commune) for database management. VietInfo is a big size that needs the strong computers with high configuration for running. But, the computer systems in the provinces are mainly provided some years ago and old. These computers might not be strong enough for installing and running this software. Therefore, the staff at levels would have more opportunities to practice, update the database and provide the data timely.

Within a project's framework, maybe this provision is too much. However, the provinces can take advantage of the other resources, like projects or programs funded by the government or international organizations.

Institutional settings: A database management mechanism should be institutionalized and decided by the provinces to ensure the regular data updating and database management. The mechanism should define clearly the roles, tasks and functions of different stakeholders, frequency of data updating, coordination among stakeholders and levels etc.

A database management group should be set up at each level. The group will be responsible for collecting, processing and updating data. The organizational structure of the database management in the provinces is advised as follows:



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DARD at provincial and district levels should be assigned as a focal point in database management in order to in alignment with the current organizational structure because it is a standing agency of CFSC at district and provincial levels. The provincial DMG should be led by DARD. Its head is a leader of DARD and its members are from the different departments. At district level, the group should be led by Chairman/Vice Chairman of DPC, members from district sections. The head of the communal DMG should be the Chairman/Vice Chairman of CPC like the district, and members from different sectors.

At communal level, if due to limited capacity and poor equipments in the communes, the communal staff should be acted as enumerators. The data collection group should be established to take responsibilities for collecting data, filling in and sending the forms to the higher levels.

Reidentification of indicators: After the piloting in the 3 provinces, it's assessed that the list of indicators should be identified again. In practice, the responsible agencies collected the data of previous years from 2006 – 2009 according to the new list of indicators identified and agreed in the workshops. Many data of disaster's losses and damages were still missing although the stakeholders said that the identified indicators were necessary and collected as requested by the higher levels. And the list of indicators is too many. This may result in the low quality and timely provision of data. Due to limited resources, the indicators should be reviewed and discussed about to ensure that they are (1) able to collect; (2) essential, that the data is considered reliable and necessary by all stakeholders; (3) available in the same quality, definition and from the same time frame in all the different districts.

It's necessary to issue an official decision on applying the list of indicators of disasters' losses and damages for the both two systems, CCFSC and General Statistics Office. This will enable to save the time, human and financial resources of the local governments because the data are only collected by one system and shared with the other. For example, the CCFSC might be assigned to collect the data or vice versa.

Replication of VietInfo: The database software, Vietinfo, should be applied in all districts of the three provinces so that it's very useful for comparison among districts and provinces as well as to see the whole picture of each province. It's the best choice that the database is ideally implemented in all communes in the provinces. The communal level is the lowest level in the administration system that plays a decisive role for the information quality from the household/ village/ communal level.

The project and the government should pay much attention to strengthening the capacities of data collection, computer skills, database updating for the communal level. However, in order to involve all the communes in the process of developing and operating the database, it needs a lot of commitment, efforts and financial resources from the project and the local governments.

Capacity building for database management groups: If the project and the provinces want to replicate the Vietinfo to the whole districts and communes, the members of the database management groups should be built enough capacities of use and management of Vietinfo and training methods. Then, they can be the provincial trainers. The provinces do not depend on the consultants from the outside. They can deliver the training themselves for the district and communal groups' members with the first support from the consultant. This will ensure the project's sustainability and the provinces' independence when the project ends and no support are from the outside.

Vietinfo dissemination: The Vietinfo should be disseminated to the broader scale. It can be publicized in the website of the provinces if the website has still enough space for it. Or

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CD for Vietinfo users should be produced by the project/provinces and delivered to the stakeholders at levels. Then, everyone can use it for their work or reference.

Strengthening capacities of data analysis and use: For more meaningful and sustainable, it needs to deliver privately a training course on analysis and use of data in Vietinfo for the staff at provincial, district and communal levels. Therefore, the staff can make better informed decisions in disaster preparedness and response and long term measures relevant to climate change adaptation. Then, the Vietinfo database will be more meaningful and practical for the provinces.

Another training course on data collection should be delivered for provincial, district and especially, communal staff who directly involve in DRM and ACC. In order to ensure the common understanding among levels and good data quality, a manual on instructions of data collection with clear definitions will be developed for the communal staff.

Translation manuals on database administration and use into Vietnamese: It's advised that the manuals should be translated into Vietnamese for the administrators and users. With the Vietnamese versions, the administrators and users will be easier for their data exploitation and database management.

5. CONCLUSIONS

In conclusion, the disaster database management systems have been developed in Phu Tho, Yen Bai, Lao Cai provinces with initial results. The results include enhancing awareness of DRR and ACC, importance of information/data for DRR and ACC, building capacities of database management and operation, etc. It stores data of disasters' losses and damages, livelihoods (relating to agriculture) for many years. It supports the local governments in calculating the losses and damages, disaster management, planning, disaster damage calculation/estimation, response and decision-making. However, it's recognized some shortcomings to be solved in coming time. One of the most important advices is to develop the institutional settings to make sure that the database management system becomes more effective and sustainable for DRR and ACC. The capacities (such as data analysis, data collection, etc.) should be enhanced further in the future for the different staff.