

BIBLIOGRAPHY

NAVARRO, CATHERINE R. APRIL 2012. Ifugao's Nurturing IndigeousKnowledge Experts (NIKE) as a Knowledge Management Undertaking for Traditional Rice Farming in Kiangang, Ifugao. Benguet State University, La Trinidad, Benguet.

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ABSTRACT

The study was conducted to draw lessons from the implementation of the NIKE program as a knowledge management undertaking by looking into the processes being done to capture, store, and share the IK and to determine the problems they had encountered while doing the process. The data were gathered through key informant interviews and document review of reports done by NIKE program.

Data gathering from IK holders was through focus group discussions, personal interviews, and group interviews. Data processing by developing information materials from raw data gathered by surveyors. The IMs developed were validated before submission for mass production. The program stored IK in printed and electronic forms being disseminated through Community Learning Centers (CLCs), exhibits, and a Pilot School in IFSU.

The problems encountered during the implementation were dangerous roads, the surveyor's security, reluctance of knowledge holders to share information, dual residency of the IK holders, language barrier, difficulties of collaboration, the aging of IK holders, and the loss of biodiversity.



Conclusions drawn indicate that indeed the NIKE Programme is a Knowledge Management undertaking; hence it should be maintained by the implementers or emulated by other entities. NIKE program's medium of sharing information considered the formal and informal means.

NIKE should be taken as a model by other IK documentation efforts. IK documentation should be treated as a priority because of the aging of IK holders.



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INTRODUCTION

Rationale

In the United Nations System, Knowledge Management (KM) is “a wide concept involving the processes of identifying and collecting relevant information and knowledge currently available, its classification and storage, timely dissemination and updating” (UNDP, 2006). These processes are centered on three major communication activities being carried out by development-oriented organizations – capturing, storing and sharing knowledge.

Among the benefits of KM are improved team communications, reduced problem solving time, consistency, improved project management, process improvement. For indigenous peoples (IPs) struggling to document their traditional knowledge which is facing the threat of extinction, KM would mean easy access to their own knowledge and a systematic way of conserving such.

Like other IPs in the world, the IPs of Ifugao have managed to nurture their indigenous knowledge through generations as shown by the continuing observance of their IK at present. The rice terraces built by their ancestors hundreds of years ago are still intact. This is an indicator that agriculture has long been practiced by their ancestors. However, it has been observed that many of their IK are now becoming vulnerable to the influences of modernization.

In an effort to keep their indigenous knowledge from getting lost, the Ifugao people embarked on a novel program they call NIKE or Nurturing Indigenous Knowledge Experts among their younger generations. This program stemmed out from a



conservation effort for the Ifugao rice terraces by SITMo or Save the Ifugao Terraces Movement.

As described in the program's website, NIKE is a joint collaborative programme that works on the transfer of indigenous knowledge from the old folks to the younger generation of Ifugaos through formal and informal means. It is being implemented by a consortium of five agencies namely Department of Education Ifugao (Dep-Ed Ifugao), Ifugao State University (IfSU), National Commissions on Indigenous People (NCIP), Save the Ifugao Terraces Movement (SITMo) and the Provincial Government of Ifugao.

It is funded by the National Federation of UNESCO Associations in Japan (NFUAJ) which aims to raise awareness in order to protect our irreplaceable cultural and natural heritage, as well as to promote local community activities, among others.

The four knowledge areas making up the cultural heritage of Ifugao covered by the program are land management, terrace engineering, construction techniques, agricultural cycle and their accompanying rituals.

The implementation of NIKE's four-phased action plan began in 2006 with SITMo mapping knowledge sources for Phase 1. Phase 2 was the development of both oral and written knowledge bases. Phase 3 was the development of knowledge transmission systems. This phase was completed in May 2010. The program is currently in its fourth and final phase which is the production of knowledge resources.

The phases of the program are similar with the processes in Knowledge Management, hence it can be said that NIKE is a KM undertaking. The encouraging outputs of the first three phases are enough reason to look into this program for lessons that may be applied in other situations, hence this study.



Statement of the Problem

Information about the NIKE program and its implementation are available in the program website and in several articles published in newspapers and other websites. Most, if not all, have been prepared by the implementing agencies. To complete the picture, there is also a need to know the experiences, perceptions and attitudes of the other actors in the project like the IK experts or members of the younger generation who are to be nurtured as IK experts in the future.

The study sought to answer the following questions particularly for indigenous knowledge in traditional rice farming:

1. How were the IK experts identified?
2. How were the IK captured or gathered from the experts?
3. How were the IK processed?
4. In what form were the IK stored?
5. In what form will the IK be shared?
6. What problems were encountered in the implementation of the program?

Objectives of the Study

The general objective of the study was to draw lessons from the implementation of the NIKE program as a knowledge management undertaking particularly on traditional rice farming.

Specifically, it aimed to:

1. Determine how the IK experts were identified;
2. Describe the methods used in gathering data from the IK experts;



3. Describe how the data gathered were processed;
4. Determine the forms in which the IK were stored;
5. Determine the forms through which the IK will be shared; and,
6. Determine the problems encountered during the implementation of the program.

Importance of the Study

The results of the study may provide insights to other agencies concerned with Indigenous Knowledge revitalization and/or transmission. Findings may also be used by other researchers, teachers, students, and community development workers as reference or supporting document.

Scope and Limitation

The study focused mainly on lessons that were gained from the NIKE program as a KM undertaking: capturing, storing and sharing of the IK of Ifugaos on the traditional rice farming in Kiangon, Ifugao.



REVIEW OF LITERATURE

Benefits Derived in Knowledge Management

Time and again, we always hear that, “knowledge is power”. As seen nowadays, information has become as important as traditional physical goods (Chowdhury, 2008). Also, as explained by Kamoche (2001), knowledge connotes power and issues related to power are of great importance to managers. This explains why Abell and Oxbrow (2001), stressed that knowledge is the most sought after remedy to uncertainty.

The aim of KM is to keep track of valuable capabilities used in one place that could be applied elsewhere (Abell and Oxbrow, 2001). Thus, successful KM can be determined through its beneficiaries, if they will be able to visualize the affectivity of knowledge. In addition, in applying a KM strategy, before collecting, storing and sharing knowledge, there should have been idea of how will the community might benefit from it.

In this case, measurement of KM strategy can be traced on the derived benefits of knowledge holders as well as the general public where the research has been done.

According to Maundu (1995), there are several ways in which the community can gain profit from collecting Indigenous Knowledge (IK), these includes the following:

- IK can be made available to the less knowledgeable within the community, especially the young by means of printed word and other learning materials.
- Individual members can use research, the literature and even their own experience to IK, which they pass on to the community.
- Innovative participatory research can be used to modify IK, in order to improve utilization.
- Specific problems can be identified together with appropriate interventions



giving rise to projects and activities beneficial to the community.

Methods of Gathering Data

There are different methods of gathering data like interviews, observations, field walks and the like, and so critical planning on which must be used must be applied in order to obtain accurate and detailed information.

Under the method of interviewing, Maundu (1995), stressed that it is the suitable method for group and individuals since it can be for a quite informal such as in market places or on roads and on more formal like community workshops or pre-arrange household visits. On the other hand for the observation, US Department of Education, Office of Educational Research and Improvement had listed two (2) advantages of it such as objective interpretation and a low burden for people providing data. However, there are four (4) disadvantages which they had also listed such as time consuming, some items are not observable, can be expensive, and participant may be affected by the observer's presence.

Meanwhile, for the guided field walks, it is a combination for interview and observation method. However, under this method, Maundu (1995), had listed several disadvantages like:

- Tiring, especially for older people, who tend to be most knowledgeable,
- Time consuming, and
- Only effective in species-rich places with considerable variations in habitat.



Methods of Storing Information

Information age or the KM age places emphasis on the power of information to help connect, develop and manage organizations and individual (Chowdhury, 2008). In addition, technologies are a means to link information and sharing of knowledge to different people in the different parts of the world.

As stated by Coakes (2003), the development of technology has taken the drudgery out of the search and analysis of data and is capable of converting it into information to which knowledge can be applied. On the other hand, having technologies available is still not enough because not all have access to these technologies. Nevertheless, it is still best that information derived may have outputs like journals, books, newspapers, photo essays, photo slides, audio CDs, DVDs, and VCDs.

Methods of Sharing Information

The essence of KM also points out to connecting people to people, connecting people to information, enabling conversion of information into knowledge and encouraging innovation and creativity through the nurturing of a knowledge environment, (Abell and Oxbrow, 2001). Basically, this explains the reason for knowledge sharing.

Moreover, it is in knowledge sharing that we make practical knowledge very useful wherein it can help improve the conceptualization of a given issue and through knowledge sharing we can prevent losing the information and lessons learned (Chavez *et al.*, 2007).

Disseminating information or sharing information can be done in different ways. As listed by DDC-CA (n.d.), here are some of ways where in knowledge can be shared:

- Photo montages can be put up in all the project meetings,



- key stake holders can allocate space on walls for short newsletter and posters,
- documentation experts can take video materials to show in communities,
- public channels can and should be used,
- short videos can be shown on television,
- materials can be put up on websites,
- case studies can be published in magazines, and
- Keeping written materials short and presenting them well with pictures.



METHODOLOGY

Locale and Time of the Study

The study was conducted in Kiangan, Ifugao. Kiangan is politically sub-divided into 15 barangays and is inhabited by *Tuwali* sub-groups. The town got its name from *Kiyyangan* (stressed in the second syllable), an ancient village near the bank of Ibulao river from across the Lagawe valley. But the name *Kiyyangan* is safely enshrined in Ifugao mythology. It is believed that Kiangan is the dwelling place of Wigan and Bugan, the mythological ancestors of the Ifugao when they migrated from *Kay-ang*. Accordingly, Kiangan is one of the oldest and one of the smallest towns in Ifugao province.

NIKE Phase I, which is the mapping of existing IK in the province, revealed that most IK on Indigenous rice production are found in Kiangan.

The study was conducted on December 2011 to March 2012.

Respondents of the Study

There were four key informants who are project implementers of the NIKE program and one IK holder on traditional rice production identified in Phase 1.

The project implementers interviewed were Rachel F. Guimbatan, 40 years old, comes from both ethnolinguistic groups, Bungbungna of the *Tuwali* and I-Henanga of the *Ayangans*. She is the Chief Technical Advisor for the Programme and also the Overall Coordinator reporting directly to the funding agency. In 2005, according to Guimbatan, she wrote the NIKE program's concept and luckily the program got support from the NFUAJ. Moreover, she was also the one who designed the project to be a four-phased programme being implemented in 4 cycles.

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Figure 1. Map of Kiangán, Ifugao showing the locale of the study

Guimbatan also said that the programme was envisioned to be piloted as a small project initiated by the NGO-SITMo, where she is volunteering, and to be expanded as a programme in its third phase and would then involve government agencies/institutions.

As she added, the NIKE concept sparked mainly by her involvement as a planner and a professional architect in the conservation of the Philippine Rice Terraces which has been placed in the World Heritage Site In Danger list in 2001.

Esther Licnachan, on the other hand is 42 years old. She is a pure *Ayangan* with his father originating from Asipulo and her mother from Mayoyao. Being the National Commission on Indigenous People (NCIP) provincial officer, she was also the NCIP representative on the NIKE program. The third key informant is Marlon Martin, also works as a project coordinator in program. The fourth key informant is Armand Camhol, 29 years old, originates in Maggok, Hungduan and belonged to the *Tuwali* groups. He was with the program during the phase 1 as Researcher/Field Surveyor and the Program Manager of Phase 2.

Maria Galeon, 73 years old, is residing in Tuplac, Kiangan and was one of the identified IK holders during the first phase of the program. At the same time she was also hired by NIKE to be one of the IK professors specializing on traditional rice cycle in the Pilot school which is IFSU during the phase 2 of the program.

Data Collection

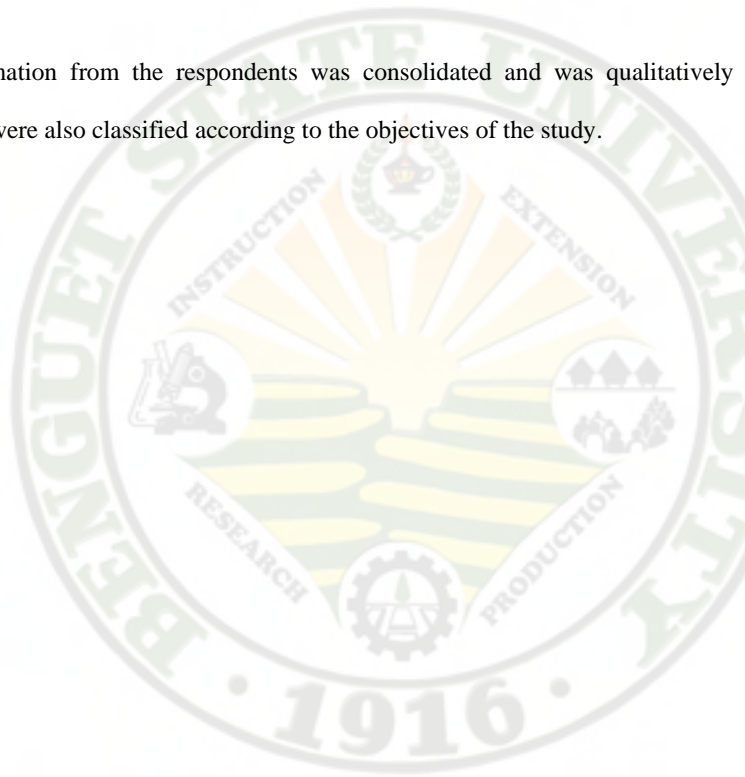
Guide questions for key informant interview were used as an instrument in collecting the needed data. Document assessment was also done to review reports and materials produced.

Data Gathered

The data gathered were the criteria and procedure used in identifying the IK experts; the methods used in gathering and processing data from the IK experts; and the forms in which the IK were stored and disseminated.

Data Analysis

All information from the respondents was consolidated and was qualitatively discussed. Items were also classified according to the objectives of the study.



RESULTS AND DISCUSSION

Findings of the study are organized and discussed in this section according to the objectives of the study and the major activities in the Knowledge Management process.

Identification of IK Experts

The identification of IK holders was done during Phase I of NIKE in April to September 2006. The survey team first considered the four heritage sites of Ifugao -- Kiangan, Hungduan, Mayoyao and Banaue. These places are still evidently rich in the indigenous culture of the province. They observed that each area had its own strength in terms of indigenous knowledge. Native house construction and stone walling were concentrated in Mayoyao; the watershed was found in Hungduan and the terrace communities were in Kiangan and Banaue. Since the municipalities of Aginaldo, Asipulo and Hingyonare among the terrace communities, they were also included in the survey. IK experts on a specific knowledge were identified from the places where the knowledge is richly manifested.

NIKE conducted the survey using the mapping technique. The mapping technique is a participatory rural appraisal method which uses situation maps indicating the location where a phenomenon is observed and in this case, where the experts are found.

Specific steps undertaken included a courtesy call to the mayor and to the barangay chairman of the locality to explain what the project was all about. Then the team asked for referral of knowledge holders from the barangay kagawad, teachers and the council of elders. The main criteria in identifying IK experts were their level of expertise and a recommendation by credible community leaders.



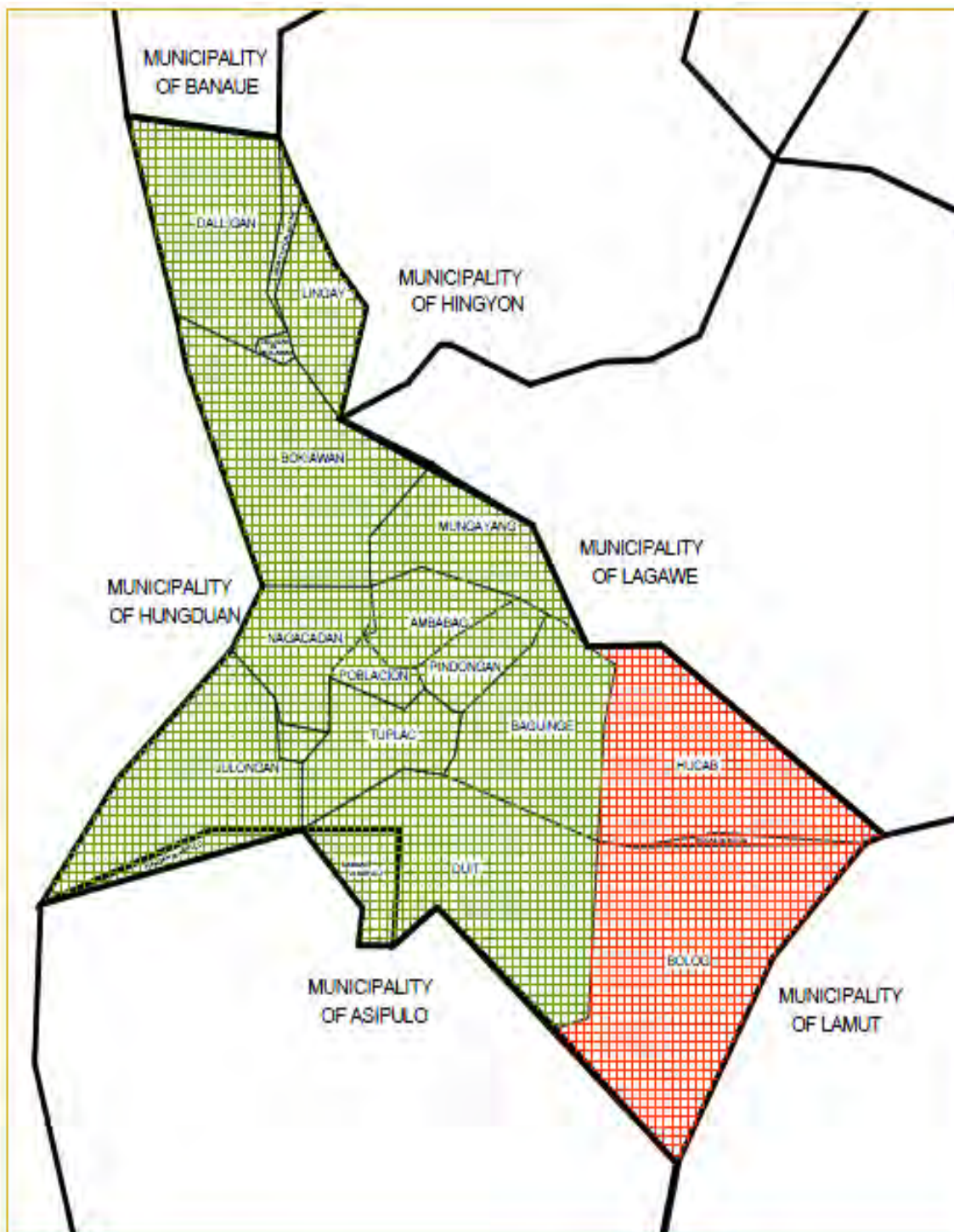


Figure 2. Sample base map used during the mapping activity.



The IK experts were then employed by the NIKE project as IK Professors. For those specializing in Traditional Rice Cycle, the identified IK Professors were Prof. Maria Galeon, a retired elementary school teacher and couples Prof. Simon Tuguinay, and Prof. Virginia Tuguinay, both farmers.

Methods of Gathering Data from the IK Experts

The NIKE team used a combination of different methods in data gathering like Focus Group Discussion and interviews. Licnahan said, “They really had to design their own strategy whenever the situation calls for it during the data gathering.”

Focus group discussion. To gather data from the elders, NIKE used FGD as a technique. Guimbatan explained that the methods used by each surveyor were not the ordinary academic Focus Group Discussions (FGDs) and interviews, for the surveyors adopted the methods out of their necessity. The FGD were done in small groups composed of three individuals. FGD was also used by the surveyors for validation. They claimed that the FGD was very effective, fast and time saving for they were able to interview three people at the same time unlike one-on-one interviews.

Personal interviews. NIKE conducted one-on-one interviews with IK holders using structured and open-ended questions formulated by the surveyors.

Sometimes, surveyors stayed overnight in the survey area to have more time for interviews with the knowledge holders. Armand Camhol, one of the surveyors, wrote in his personal accounts that he usually did his interviews at night after the IK holders finished their farm duties and other household tasks. This conformed with what Johnson (1992) said, cited by Grenier (1998), that interviews are best done in places where the informant is most comfortable.



Some surveyors started the interview by explaining further the purpose of documenting the IK in order to gain the interviewee's participation and to wipe out their doubts. After this, appointment for interviews was sought by the surveyors.

Group interviews. Structured interviews in groups composed of 3-5 individuals were done. In some instances, this group of individual was being chanced by the surveyor doing the indigenous ways they were good at and so a permission to interview this group was asked by the surveyor and at the same time an opportunity to take pictures while they were working.

Processing of the Data Gathered

Data processing is the process of converting data into information. Hey (2004) stated that "it is commonly assumed that data itself inherently contain no meanings. Information is therefore often seen as "data with meaning". Following this line of thought, data processing is therefore concerned with putting meaning into raw data gathered from the field. For this project, data processing was done through the formulation of technical working groups. The input was raw data and the output was the instructional material.

Formulation of Technical Working Groups. Technical Working Group (TWGs) were organized at Dep-Ed and at IFSU. The TWG at Dep-Ed, composed of two writers, was tasked to develop materials for the elementary and secondary levels. The TWG at IFSU, composed of 20 writers who have undergone some training on textbook-workbook writing and on IK systems and practices, was tasked to develop materials for the tertiary level.



Data consolidation. After the interviews and FGDs, members of the TWGs came together to consolidate all gathered data and put them into writing.

Production of instructional materials (IMs). Instructional materials were produced for the elementary, secondary, and tertiary levels.

Presentation meetings. The IMs developed were shown during presentation meetings with the IK holders, people from the academe, cultural experts and other project implementers for validation.

Pilot testing. After the validation of IMs in the presentation meetings, TWGs began pilot testing of the materials in their own classes at IFSU during the Second Semester of SY 2009-2010. Inputs from students were gathered for the improvement of the materials.

Final editing. Finalized drafts of IMs were subjected to final editing

Validation. Final validation with IK holders and project staff was done with the presentation of the revised version of IMs.

The next phase will take care of the reproduction of the IMs.

Forms of Storing the IKs

Guimbatan said that the IKs documented were stored both in printed and electronic forms. These are all lodged at NCIP Ifugao Provincial Office. This is the agency concerned primarily with protecting indigenous property rights and where access to this information is subjected to policies.

Printed form. The written materials are handouts, books, textbook-workbook, teaching modules, and final reports. These are all handled by IFSU. They are all in the final printing stage at the time of the study.



On the other hand, according to Licnahan, Dep-Ed was working on the integration of IK in books which will be used by the elementary students, from Grades 3-6. Martin said the books developed by DepEd are still subject to validation.

At the NCIP mini-library, there is a total of nine written materials -- six compilations of the profiling and identification of IK holders, one final report on NIKE phase 2, one reference and one module material on IK.

Electronic form. Licnahan said that during Phase 3, they were able to create the “ProjectNIKE” website (www.nikeprogramme.org) which serves as storage of the published and unpublished Ifugao IKs. Updates or current happenings on the NIKE program are also found in the website. The website can be accessed through the internet. Sample pages from the website are shown in Figures 3-6.

Figure 3 shows the main page of the NIKE Website. It contains the logos of agencies involved in the project. Under the Main Menu, there is a link named IK Database. Clicking on this link brings one to another page (Figure 4) indicating that the database is still being populated. The sub-links which include Stories of Old, Bookshelf, Videos, IK Researches, Let’s Learn Ifugao and Ifugao-English Dictionary.

Sub-link Stories of Old leads one to a collection of ten Ifugao folk stories, all authored by a certain Lourdes Dulawan. Sub-link Bookshelf leads one to more links of information materials on Ifugao. In this collection, only the NIKE papers came from the project. The rest are from other sources.

Sub-link IK Researches brings one to nine articles, three of which are on ricefarming. These are Tinawon: Ifugao Traditional Rice Production (Figure 4), Pingkol Dilemma (Figure 5), and Holok Pest Management (Figure 6).





Figure 3. Main page of the NIKE program website

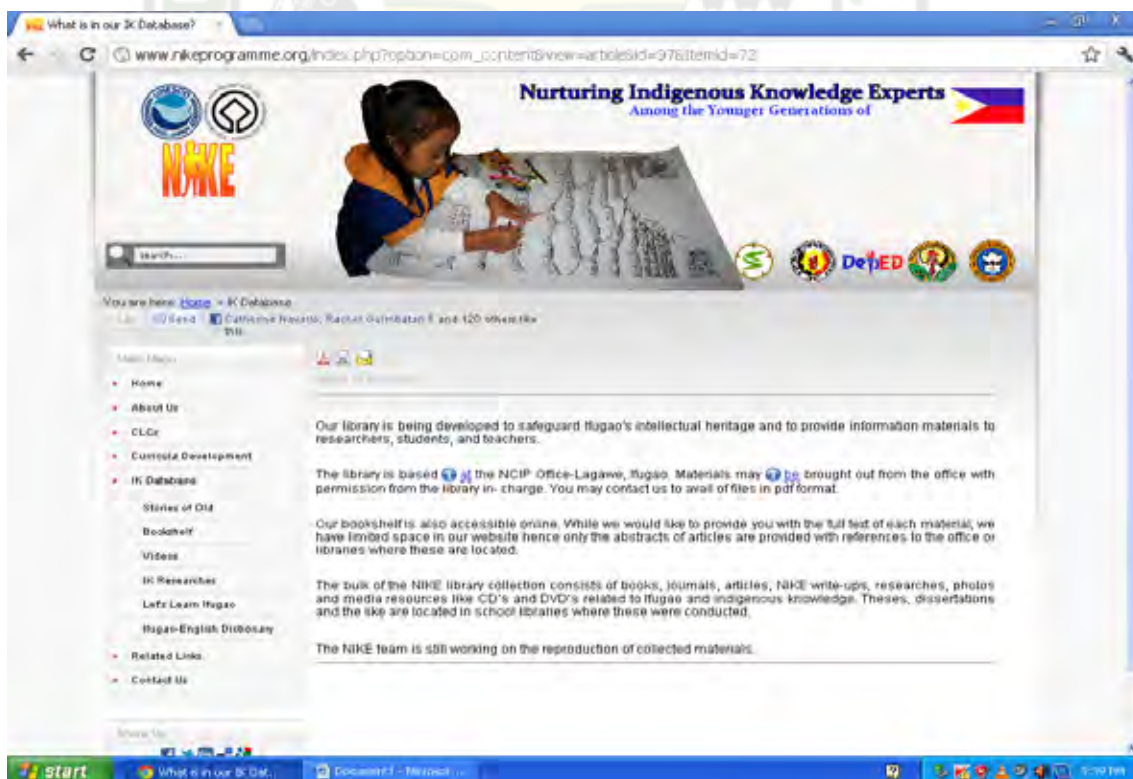


Figure 4. Information about NIKE program's IK database.



The first article presents the four seasons in the agricultural calendar including a description of activities and rituals. The second article is about an indigenous practice that is at the brink of extinction due to the introduction of the Golden Apple Snail. The third one is about an endangered pest management system using herbs and accompanying rituals.

Forms of Sharing IKs

The forms of IK transmission are aptly described by Guimbatan when she stated “...development is possible in a conservation area through IK transfer/education, and it can be done by harnessing the very same factors (formal education, communication technology among others) that are weakening our link to our intellectual heritage”.

She further elaborated that transmission was done through formal means by DepEd and IFSU and through informal means by the NCIP (online education and research) and SITMO (Community Learning Centers).

Community Learning Centers (CLCs). As described in their website, CLCs are “community-led learning centers handled mainly by indigenous knowledge holders belonging to different people's organizations. CLCs will serve as venues for indigenous knowledge transmission at the community level to complement IK integration into the formal education system”. Guimbatan said that these CLCs are NIKE’s informal means of transmitting IKs. The centers cater to all ages like scholars, students, pupils, tourist, professionals and OSYs. Seven CLCs have already been established in the four heritage sites in Kiangan, Mayoyao, Hungduan and Banaue.

Since a NIKE building has not been constructed, municipality-operated buildings





Figure 4. IK research on the Tinawon rice production.



Figure 5. IK research on the Pingkoldilemma





Figure 6. IK research on Holok pest management.

have been used for CLC activities. Aside from lectures, there were hands-on activities like making garden mounds and making dikes for tourists/visitors and the youth specifically the OSYs.

Exhibits. With the objective of promoting IK education among local community people and government project implementers, two exhibits on the IK movement were put up. These were at Ifugao State University (IFSU) and Don Bosco School in Lagawe, Ifugao. The exhibits attracted not only students but also people of various professions and stature in life.

Pilot School. IFSU served as the pilot school of NIKE for the integration and sharing of IK. There were eight representative knowledge holders from three municipalities, Kiangnan (3), Hungduan (3) and Mayoyao (2), who were hired to work in



the Pilot school for the transfer of IKs. This was attended by 14 young students and four volunteers from SITMo's Eco-Tourism programme.

Meanwhile, the trainings conducted in the pilot school were: Training of Out-of-School Youths (OSYs) in Eco-Knowledge Tourism and Training of OSYs in IK monitoring and Knowledge Management. The training of OSYs in Eco-Knowledge Tourism had the purpose of training tourist guides on IK and its proper utilization in tourism activities. Moreover, as expected by the trainers, at the end of the training, the students had acquired more than basic theoretical knowledge and skills in IK at the same time producing a group of IK conscious tour guides. On the other hand, the training of OSYs in IK monitoring and KM dealt on the management of the IK of the CLC in the three heritage areas, Kiangnan, Hungduan, and Mayoyao.

Problems Encountered in the Implementation of the Program

Most of the problems encountered during the implementation of the program were on the identification of knowledge holders.

Dangerous roads. Considering the mountainous landscape of Ifugao and the bad condition of roads, the surveyors constantly faced danger as they travel past cliffs and areas prone to erosion. Most of the time, they also need to travel by foot through dark and mossy forests before reaching far flung target areas. Usually the walking consumed most of their time and as a result, they end up sleeping in the villages.

Security of surveyors. The security of the surveyors was also a problem. Since interviews with knowledge holders usually took place after farm work, the surveyors would find themselves walking home alone late at night because there were no



transportation available. They have been suspected to be troublemakers or members of the rebel group New Peoples' Army.

Reluctance of IK holders. Licnahan mentioned as a problem during the data gathering the reluctance of the knowledge holders to share the needed information. They really had to design their own technique. The reason for the IK holders' reluctance is their past experiences. An outsider came to document their practices and after that the outsider did not acknowledge these IK holders. Some instances, like the practice of using medicinal plants by the IK holders in a practice should only be known in the IK holders' community.

Dual residency of IK holders. Some of the knowledge holders identified are serving everyone in the sub-ethnolinguistic group which occupies two or three barangays. As a result, mapping the target areas requires a lot of validation and study.

Language barriers. Martin explained that although it is a single province, Ifugaohas diverse ethno-linguistic compositions. There are slight differences in customary practices, terminologies and other areas of IK so it was difficult to come up with standard Ifugao IK classifications or even definitions. The validation process also posed a great challenge in data processing as most IK holders were unlettered such that every single page of the workbook needed to be discussed individually and therefore, time-consuming.

Difficulties of collaboration. The third phase of the project was implemented by a consortium of five agencies. There were some agencies having more than one team leader working and deciding on the same project which at times would lead to conflicts. Likewise, facilitating joint collaboration of agencies with different personalities had also



been a challenge particularly on the issues between the academic and non-academic agencies defining valid knowledge.

The aging of IK holders. According to Licnahan, with the mapping activity they had done, one challenge that came up was their realization that the knowledge holders were usually the oldies themselves. This is made worse by the observation that very few are following their footsteps and that youth are not very keen about applying the indigenous knowledge.

Maria Galeon, one of the IK holders believes that the program is acceptable among the out-of-school youth because they were very eager to learn. She noticed that they were taking down notes during lectures and that they kept on asking when the construction of the building will start. However, despite this acceptance of the OSYs, Galeon said that she only feels sorry that the youths do not do things the way these were done before. In the clearing of area or land preparation, they now use rotor which makes plowing very easy. Nevertheless, she also added that in order for the youth to appreciate IK, the IK holders have been trying to encourage the youth by telling them the advantages of organic fertilizers over commercialized fertilizers.

Loss of biodiversity. The loss of biodiversity can lead to the loss of indigenous knowledge. This is manifested in the endangered practice of ‘pingkol’. Even if people would like to do it, some required plants are no longer available like water lilies, granaria, and algae. They were all eaten by the “*golden kuhol*” or the golden apple snail.



SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The study was conducted to draw lessons from the implementation of the NIKE program as a knowledge management undertaking particularly on traditional rice farming. Specifically, it aimed to determine the processes being done to capture, store, and share the IK and to determine the problems they had encountered while doing the process. The data were gathered through key informant interviews and document review of reports done by NIKE program.

The IK holders were identified through referrals from key informants of target areas/sites or through the recommendations of the local community. Data gathering from IK holders was through focus group discussions, personal interviews, and group interviews. Data processing was done by a group of writers comprising the Technical Working Groups who developed information materials from raw data gathered by surveyors. The IMs developed went through validation and were soon pilot tested in formal classes. The inputs gained from pilot testing were incorporated into the IMs which were ready for mass production at the time of the study

The program stored IK in printed and electronic forms. The printed form were handouts, books, textbook-workbook, teaching modules, and final reports while the electronic form was the Website. The program disseminated IK through Community Learning Centers (CLCs) in municipality-operated buildings, exhibits, and thru a Pilot School in IFSU.



The problems encountered during the implementation were dangerous roads, the surveyor's security, reluctance of knowledge holders to share information, dual residency of the IK holders, language barrier, difficulties of collaboration, the aging of IK holders, and the loss of biodiversity.

Conclusion

Based on the findings of the study, the following conclusions were drawn:

1. The NIKE Programme is a Knowledge Management undertaking.
2. The small number of IK holders identified indicates that they are already decreasing in number.
3. Gathering data from IK holders requires methods that suit the IK holders' sensibilities.
4. Processing of data gathered involved processes like validation and pilot testing before reproduction.
5. NIKE program's medium of sharing information considered the formal and informal means.

Recommendations

Based on the conclusions of the study, the following recommendations are formulated:

1. The NIKE should be taken as a model by other IK documentation efforts.
2. IK documentation should be treated as a priority because of the aging of IK holders.
3. IK documentation researchers should be trained on IP-sensitive methodologies.



4. An evaluation of this program should also be done to assess the program's strengths, and weaknesses.



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APPENDIX A

Communication Letter



Benguet State University
College of Agriculture
Department of Development Communication

Ma'am/Sir

I am Catherine Navarro, student of Benguet State University taking up Bachelor of Science in Development Communication major in Science Communication. Currently, I am doing my undergraduate thesis titled "IFUGAO'S NURTURING INDIGENOUS KNOWLEDGE EXPERTS (NIKE) PROGRAM AS A KNOWLEDGE MANAGEMENT UNDERTAKING FOR TRADITIONAL AGRICULTURE IN KIANGAN, IFUGAO".

Since you are involved in the NIKE program, may I request you to be one of my respondents? Rest assured that all information to be given will only be for the purpose of the study.

Your positive response to this request is highly appreciated. Thank you very much.

Respectfully yours,

CATHERINE R. NAVARRO
Researcher

Noted:

MARIA LUZ D. FANG-ASAN
Adviser

APPENDIX B

Consent Form

Benguet State University
DEPARTMENT OF DEVELOPMENT COMMUNICATION
College of Agriculture

PROJECT TITLE: IFUGAO'S NURTURING INDIGENOUS KNOWLEDGE EXPERTS AS A KNOWLEDGE MANAGEMENT UNDERTAKING FOR TRADITIONAL RICE FARMING IN KIANGAN, IFUGAO.

RESEARCHER: CATHERINE R. NAVARRO

I have read and understood the information in the Explanatory Statement and had been given the opportunity to consider the opportunity to consider and ask questions to the information regarding the involvement in this study. I have spoken directly to my investigator who has answered to my satisfaction all my questions. I have received a copy of the Explanatory Statement and Informed Consent Form. I voluntarily agree to participate.

Participant's Signature

_____ Date: _____

Name of Participant

Signature of the Participant

Witness or Legal Guardian's Signature:

(Only when participant cannot read or sign this Informed Consent)

_____ Date: _____

Name of Witness/

Signature of Witness/

Legal Guardian

Legal Guardian,

Investigator's Signature:

I, the undersigned, certify that to the best of my knowledge, the participant signing this consent form has read the information in the Explanatory Statement fully, that this has been carefully explained to him/ her, and that he/she clearly understands the nature, risks, and benefits of his/ her participation in this study.

_____ Date: _____

Name of Investigator

Signature of Investigator

APPENDIX C

Guide Questions for the Key Informant-Project Implementers

PROFILE

Name: _____

Age: _____

Position in the community: _____

Role in the NIKE: _____

QUESTIONS:

1. How did you get involved with the NIKE program?
2. What were the steps followed by the NIKE in:
 - a. Identifying the IK experts/holders
 - b. Gathering data from the IK experts/holders
 - c. Processing of Data gathered from IK experts/holders
3. What were the forms of IK used by NIKE in:
 - a. Storing the IK
 - b. Sharing the IK
4. What problems have you encountered in the NIKE program on
 - a. Gathering the data
 - b. Storing the IK
 - c. Sharing the IK
5. What lessons have you learned from the implementation of the program?

APPENDIX D

Guide Questions for the Key Informant-IK Experts/holders

PROFILE

Name: _____

Sex: _____ Male _____ Female

Age: _____

Position in the community: _____

Role in the NIKE: _____

QUESTIONS:

1. How did you get involved with the NIKE program?
2. What are the activities/ services implemented by NIKE in your barangay?
3. What are the advantages and disadvantages of the activities/services?
4. What are the problems you have encountered in teaching IK?
5. How did you address this problem?

APPENDIX E

IK Research Uploaded in NIKE Website

TINAWON: IFUGAO TRADITIONAL RICE PRODUCTION



INTRODUCTION

Traditional rice production in Ifugao is divided into two phases, namely: field preparation and rice production. These are subdivided into four seasons of unequal duration in the agricultural calendar, namely: *kiwang* (offseason), *lawang* (planting season), *tiyalgo* (dry season), *ahitulu* (harvest season). Keenness on the effects of astrologic and seasonal changes on the crops prompted Ifugao forebears to carefully plan each agricultural work within a year to prevent crop failure. The systematic scheduling of tasks in rice cultivation exemplifies an efficient organization of agricultural work.

Meanwhile, understanding on soil degradation and rejuvenation made it imperative for them to cultivate rice crop only for six months and left the rice fields to fallow for the remaining months. Further, knowledge on the rich diversity of biological resources existing in the Ifugao agro-ecosystem facilitated the discovery of useful herbs in effective pest management.

SEASONS IN THE AGRICULTURAL CALENDAR

Because districts differ in their ecological settings and owners of ritual fields (*puntonakan*) have their leeway in initiating agronomic activities districts follow different schedules. Thus, annual seasonal calendars are specific to particular districts. Also, precise dating is impossible as years rarely have the same number of days. The

termination of each local agricultural year is determined by the conclusion of harvest rites and not by celestial phenomena (Conklin: 1980:13).

IWANG/KIWANG: OFF SEASON

This is the longest season with rainy and cold days as well as typhoons. It begins in late July or early August after the last ritual holiday of the preceding harvests until late November or first part of December. Rice fields are left to fallow to regain their fertility. Meanwhile, Woodlots are planted and swiddens are harvested and replanted. Moreover, prestige feasts are usually held during this period as there is abundance of food.

➤ WORK STAGES and RITUALS

Ubaya Feast. When there is an exceptionally good harvest, a post harvest thanksgiving feast (*ubaya*) takes place. Animal sacrifices consist of a pig and five chickens. Rice fields and the rice granary are blessed so that they may continue to yield abundantly and be protected from theft and calamities.

Lukya/ Luat Ritual. This means “to open”. After about a month, this ritual is performed to seek permission from the deities before the first bundles of rice are brought out for consumption. Grains are brought out for pounding starting with the content of the *huguhug* then the *palah*. For the *tumonak*, it requires the offering of ten chickens and a pig. However, a common farmer may just offer a chicken

Apuy. This is done after about two months after the *luat*. At the rice granary of the couple, three chickens are offered to the deities and ancestors. Bundles of rice stored at the granary are brought out for consumption.

Bakle. Rice cakes are prepared at the rice granary of the *tumonak*. Drinking and feasting is sought. Farmers help in pounding the glutinous rice into flour. They eat and drink until evening. The bulul are brought out of the granary to witness the rites.

Ahiamun. In the early part of August, small groups of women return to the field to cut back the dead and ratooning rice plants. Then they are treaded into the mud to decay thereby enhancing soil fertility.

Ahiloba. Terrace walls including the paddies, dikes, and surroundings are cleared. Water outlets are blocked to raise water levels in the terrace. At the same time, they make mounds (*inado/pingkol*) at the center of the field or at the sides of the terraces for planting vegetables

LAWANG:PLANTING SEASON

This is the season of field work and rice planting. It runs from late November until March. During this period, terraces are prepared for planting.

➤ **WORK STAGE S and RITUALS**

Ahipaud/ ahi law-ang. As soon as the women finish clearing the field, the men take their turn in the field work. They level the pond field, reshape the paddies, and repair whatever part of the rice field is destroyed during the previous agricultural year, especially the mud or stonewalls and the dikes.

Ahipaphod. Seed bed preparation. In preparing the seedbed (*panopnakan*), the pond field is drained of water. Any living organism that might eat the seeds or deter their germination is removed. Next, the seedbed is leveled.

Lokah/ loah. Before the rice grains are brought out to the rice fields for sowing, one chicken is offered to the skyworld deities so they will allow the seeds to germinate well and be protected from pests and calamities.

Ahiponak/ ahipatang. Upon completion of the *lokah* ritual, the rice panicles are placed on the seedbed. Seeding is done only in the afternoon so that fowls will not devour it. The one who laid the panicles, usually an old woman, should observe the following:

- a. She should not enter the house until dusk; otherwise, rats will ravage the seeds on the seedbed;
- b. Upon entering the house, she should immediately go to one corner, sit, and wait for other members of the family to prepare her food;
- c. She must avoid warm foods, vine vegetables, and meat offered in a ritual lest the grains will not sprout; and
- d. She must not take a bath until the seeds germinate so that the grains will grow evenly.

Panal. Again, the deities are supplicated so that the seeds may germinate well and be protected from pests and calamities.

Tungo. A ritual rest day is observed after sowing. Virtually, no one is allowed to go to the rice fields. Violation of this *tungo* may provoke the ire of the deities and will not affect the germination and growth of the seedlings.

Ahibalin and ahihadah. While observing all these restrictions, the woman can accomplish other field tasks. If there are rice stalks and weeds that did not rot, she turns

them over (*balin*) to putrefy further or remove (*hadah*) them. The rest of the pond field is also prepared for transplanting.

Bolnat. When the seedlings have grown and ready to be transplanted, this ritual is held to beg the deities not to let the seedlings wilt when transplanted; instead, they are implored to allow the seedlings to grow well and yield abundantly.

Ahiboge/ ahitunod. When the seedlings grow about a foot, transplanting (*kahiboge*) sets in. The owner of the biggest rice field (*tumonak*) initiates the first transplanting activity in his rice field.

Kulpi / Urpi. This is held after every farmer has finished transplanting rice seedlings in their respective fields. It is done to thank the deities for the success of the transplanting season. Abundant rice wine is prepared and every farmer partakes in the merry-making. Meanwhile, the deities are implored to protect the rice crop from pests and calamities so they may grow healthy and mature well.

TIYALGO: DRY SEASON

(This season lasts about 3 months, from)

This period runs from late March until late June. By this time, the rice seedlings are growing. Farmers devote their time in maintaining rice crops and irrigation channels as well as destruction of pests. Meanwhile, swidden farms are planted.

➤ WORK STAGES and RITULAS

Hagophop. Before the first weeding of the rice crops, this ritual is performed to seek permission from the deities so that they will allow the weeds to wilt but not the rice crops.

Ahikagoko, ahihagaphap, ahilupung. When the crops grew about 2 feet tall, groups of women set about to weed them (*kagoko*). This enables the roots to acquire all the necessary nutrients from the soil. After which, they clean the paddies (*hagaphap*), walls and surroundings (*lupung*) for the second time.

Holok Pest Ritual. When infected plants are found, all infected parts are picked off and burned or left under the hot sun today. In case of army worms attack, herbs are selected, chopped, and mixed to make a potent compound against the pests. As always, sacrificial animals are offered and strict observance to certain restrictions is required. Another technique in pest control is to synchronize transplanting. This way, pests spread and the devastating effect they can cause in one rice field is minimized.

Hulin/Tagtag Ritual. This is performed when rats infest the rice crops. Groups of men drive away the rats from the fields with the use of wooden implements and bamboo clappers.

Ahiabul/ahiadug. As soon the crops boot (*munbuhbuh/ munhulit*), the farmers put up scarecrows and tie strings to ward off birds from eating the spikelets.

Bodad. When the rice crops are about to bear grains, this ritual is performed to seek the blessings of the deities so the grains will be full, heavy, and mature well. Three chickens are offered.

Paad. The farmers must refrain from eating all kinds of aquatic foods, otherwise, the spikelets will not bear grains.

Gito and Puwo. This thunderstorm and typhoon rituals are performed to implore the deities to spare the rice crops from being destroyed.

AHITULU/AHI-ANI: HARVEST SEASON

This is the shortest season in the Ifugao calendar. It runs from late June to July and it concludes the agricultural year

➤ WORK STAGES and RITUALS

Hanglag. Early bundles of rice are reaped from the rice fields and toasted to make *tinukpi*. This is to test the grains if they are ready to be harvested. Meanwhile, the *mumbaki* invokes the deities to hasten the ripening of the grains.

Ngilin. On the eve before the scheduled day of harvest, a chick is offered to the deity of covetousness (Umamo) so they will not interfere during harvest. The people believe that because of their jealousy, they may cause trouble among the harvesters and other workers or may decrease the yield; hence, they must be appeased.

Ahitulu/ ahibotok/ ahi ani. After confirming that the grains are ripe, harvest begins. Once again, the first to harvest his crop is the *tumonak*. After him, the rest may follow. Very early in the morning, before harvesters reach the rice field, a small group of women set out to cut choice seeds (*binong-o*) to be used on the next agricultural cycle. Women harvest the grains while the men carry the harvest to the rice granary. Implements used are: (a) *gamulang*- knife used by women for gathering grains; and (b) *batawel* - wooden pole carried on the shoulders of men with bundles of rice placed on both ends of the pole. Compared to other work stages, the harvest season is the most enjoyable since everybody participates in the harvest activities regardless of age, gender, and capability.

Aside from that, abundant rice wine is served both at the village and at the rice field, thus, relieving the harvesters' (*munbotok*) and the carriers' (*munbatawel*) thirst and weariness. To top it all, both groups of men and women sing the *hudhud* and engage in a playful banter, thus, creating a cheerful atmosphere. After harvest, the people take a rest for about two to three weeks. Then, the women return to the field to glean late ripening grains.

Dimakal. Post Harvest. Everyone has harvested his or her rice field.

Ahihape and Ponpon. Drying and Storage. The newly harvested grains are dried under the sun the following day. After three days of drying, the grains are stored inside the rice granary. Some are brought inside the residential houses and kept in the *huguhug* as well as in the *pala*.

Tungo. Rest day is declared the next day after harvest.

Luwa Ritual. This ritual is performed to ask permission from the deities for the people to eat shells and fishes as well as vegetables.

Huap Ritual. To close the season, another ritual, the *hu-ap*, is performed. *Huap* literally means "to cover". One chicken is needed for the accomplishment of this ritual. All instruments and paraphernalia used during the ritual performances are kept.

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