Lao Extension Approach

Report on the findings from the Impact Study

Second Round

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Overall Summary of findings (1)

- All LEA villages have already **implemented** the **Livelihood Analysis**, **VES Intro meeting** and **TNA**.
- The **number of trainings and follow-up** visits done has been quite **limited** and a **single training** usually **covered several Production Steps**. This is especially relevant as the number of trainings and follow-up has shown to be the **main factor for changes of Production Techniques** by farmers.
- **The rate of change of Production Techniques by Production Group members** was quite **high**, **especially** for **Pig**-Production (where farmers had received most trainings). PG members also reported **more increase in Production and Income** than other villagers in the same village and farmers in non-LEA villagers.

Overall Summary of findings (2)

- **Non-PG farmers in LEA villages** changed their techniques considerably more often and report **more increase in Production and Income than** farmers in **non-LEA villages**. This suggests that **farmer to farmer exchange is taking place**.
- Taught **techniques** are generally **appropriate**, also for poor farmers. However they are also **more labor intensive**.
- **25%** of Group members are **women** and **almost all** belong to **ethnic minorities**. **No social groups** have been **excluded**.
- **Activities by Production Groups** are quite **limited**. Villagers rarely see the Village Extension System as a major output of the LEA.
- **Only parts** of villagers who are not yet PG-members **see Production Groups to be successful** and would like to become a member.

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PART 1: METHODOLOGY

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1st and 2nd Impact Study report

What is the same, what is different?

- Some of the information in this 2nd report **overlaps** with findings from the 1st round
- On the other hand has the focus been shifted. The 2nd report tries to be **complementary** to the 1st report and focusses less on the village extension system and more on the (change of) Production-techniques and its factors.
- In the past year, villages in the sample had started at different points of time. This year, the information shows a **picture of 8 villages one year after the LEA started.**

Methodology

- The **results** of the Impact-Study are **based on:**
  - **Group discussions** were held with:
    - Village Authorities (LEA- and control-villages)
    - Village Extension Workers (LEA-villages)
    - Members of Production Groups (LEA-villages)
    - Other villagers (LEA-villages)
  - **Interviews** were held with around 300 HHs (LEA- and control-villages) in the 1st round and 117 HHs in the 2nd round
- The field study was carried out by **graduates** and former graduates **from** the **Agricultural Economics** Department of **NUoL**

Validity / Reliability of data

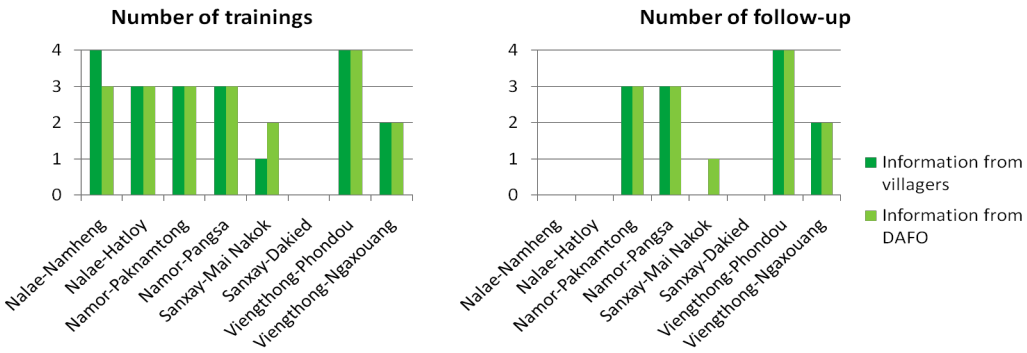
- A particular emphasis has been put on **getting information** not only from Village Authorities and Heads of Production Groups, but also from Production Group members and other **villagers**.
- Many **data-items** have been **asked both in Group Discussions and in HH-interviews** (cross-validation). In general the results appeared very similar, which indicates that the findings a valid.

Can we believe DAFO? Can we believe the villagers?

A comparison of Information from DAFO vs. Information from villagers

There were no big differences found between information from DAFO and from villagers on activity implementation.

- In 6 out of 8 villages the information from DAFO and from villagers was identical.
- In the 2 remaining villages, differences were only small.



Sampling Villages

- A **conscious sampling** of 8 LEA- and 4 control-villages (first round: 18/9) has been applied to cover the following dimensions:
  - Villages in the **North and South**
  - Villages, which are **near** and which are **far** from the District-towns
  - **Poor and affluent** villages
- All LEA villages in the 2nd round of the study have **started** with the **LEA between February and October 2008**
- **Control villages** have been chosen, which are near to the chosen LEA-villages and share similar socio-economic characteristics

Sampling Households

- A total of **117 HHs** being asked in the HH-questionnaire were **selected according to the following criteria:**
  - PG Members
  - HHs in LEA villages, which are not PG members
  - HHs in neighbouring villages, which raise the same kind of animal or plant the same crop as the PG
- Within the HH interviews **interviewed persons** were:
  - 9 HHs: husband and wife together
  - 21 HHs: only the wife
  - 86 HHs: only the husband

Analysis of data

- Data was **analysed** together **with former graduates from the Department of Agricultural Economics of the NUoL** (now partly teachers at NUoL and staff of MAF)
- In order to be able to do so participants had to be **trained** in
  - Cleaning data
  - Categorizing data
  - Analyzing data (including the production of charts)
  - Interpreting data

Interpretation of results

- A particular focus has been put on **opinions by villagers** as „customers“ of extension staff (participatory approach)
- According to experience, **expectations and standards by villagers are quite low**. Therefore the following reading of results is suggested:

Villager's rating	Very good	Good	A little / average / normal	Not good
Suggested Interpretation	Everything is fine	There are problems, but no serious ones	There are quite serious problems.	Nothing is working

PART 2: CHARACTERISTICS OF LEA VILLAGES

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Geography, language and major incidences in LEA villages

- **6** of the LEA villages (75%) are located in **mountainous** areas, only **2** (25%) in the **plains** (none on a plateau)
- Lao language skills:
  - In 7 out of 8 villages men can speak Lao well, but **only** in **3 villages**, **women can speak well.** This might be one of the reasons why women participate less in PGs than men.
- Major incidences in the past year
  - In **4** LEA **villages**, there was a **flood** in the last year
  - **None** of the villages **moved** in total or in parts since LEA started

Assistance from other projects and from companies

- **6** of the LEA villages (75%) also **get assistance from other projects**, 3 of them (37%) for the **same crop/animal**, which is **promoted by the LEA**
- **1 village** gets **assistance from a company**, but not related to LEA supported crops/animals
- **6** LEA villages (75%) **have a Village Development Fund** and 1 has an animal revolving fund

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PART 3:
PROCESSES – WHAT HAPPENED IN THE FIRST YEAR OF LEA?

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Processes up to now - Overview

- **All villages** have done the **Village Livelihood Analysis**, the VES Intro meeting on Kum Ban level and the Training Needs Assessment
- **Trainings** have been done in the **7 out of 8** villages (in average 2,9 times) and **follow-up visits in 4 out of 8** (in average 2,5 times)
- Only **one village** has done the **FEF/EVES** meeting and selected a VEW

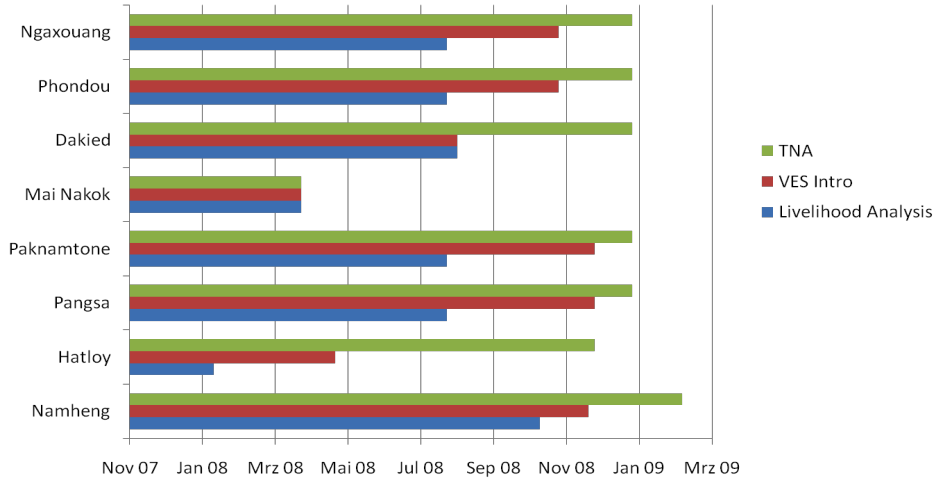
Processes up to now – Overview

Province	District	Village	Village Livelihood Analysis	VES Intro	TNA	PG trainings	PG follow-up	FEF/EVES	VA trainings	VEW trainings	Kum Ban Exchange meeting
Luang Namtha	Nalae	Namheng	1	1	1	4	0	0	0	0	0
Luang Namtha	Nalae	Hatloy	1	1	1	3	0	0	0	0	0
Oudomxay	Namor	Pangsa	1	1	1	3	2	0	0	0	0
Oudomxay	Namor	Paknamtone	1	1	1	3	2	0	0	0	0
Attapeu	Sanxay	Mai Nakok	1	1	1	1	0	0	0	0	0
Attapeu	Sanxay	Dakied	1	1	1	0	0	0	0	0	0
Bolikhamxay	Viengthong	Phondou	1	1	1	4	4	1	0	0	0
Bolikhamxay	Viengthong	Ngaxouang	1	1	1	2	2	0	0	0	0
Number of villages			All	All	All	7/8	4/8	1/8	0	0	0
Average number of times						2,9	2,5				

Livelihood Analysis, VES Intro and TNA

- Generally, Livelihood Analysis, VES Intro and TNA was done in the **correct sequence** and with about **2 month time gap** between each process
  - An exception was **Sanxay** where DAFO joined **several villages** and did the Livelihood Analysis and the VES Intro meeting at the **same time** (and not seperately)
  - On the other hand was the in **Hatloy** (Nalae), the total **time gap** between Livelihood Analysis and TNA was **10 months**

Livelihood Analysis, VES Intro and TNA



Livelihood Analysis and TNA
Participation

Participation in the Livelihood Analysis and the TNA has been **quite broad** with an average of 65 people (35-40% women). **In 3 out of 8 villages** (**37%**) **representatives from all HHs could participate** in the meetings.

	Livelihood Analysis	TNA
% women	35%	40%
average number of participants	65	65
least number of participants	10 (Dakied, Sanxay)	42 (Hatloy, Nalae)
biggest number of participants	140 (Pangsa, Namor)	105 (Paknamtone , Namor)
All HHs participated?	3 out of 8 villages	3 out of 8 villages

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PART 4:
OPINIONS BY VILLAGERS ON THE LEA AND DAFO'S WORK

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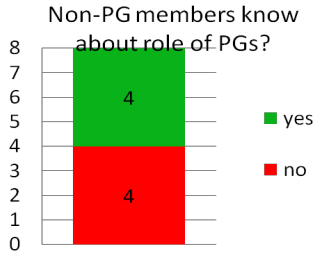
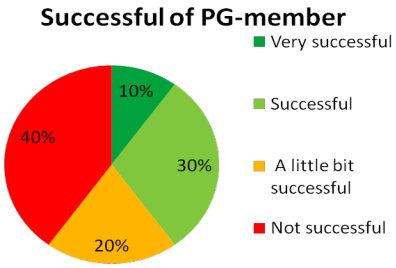
What do Village Authorities know and think about the LEA?

- **Village Authorities** are **generally positive about the LEA.**
- **They understand** that the **LEA** approach is to teach villagers **improved production techniques**. They hope that new production techniques will be better than the old ones.
- A functioning **Village Extension System** is however **only in one village mentioned** as an output of the LEA.

What do non-PG members know and think about the LEA?





- **Only 4 out of 8 focus-groups** of non-PG members **can explain the function of Production Groups**. They see PGs **as** a **model** which can teach others about new techniques.
- Production Groups are **not yet very popular** with general villagers. In 4 out of 10 villages, they think that PGs are very successful or successful.

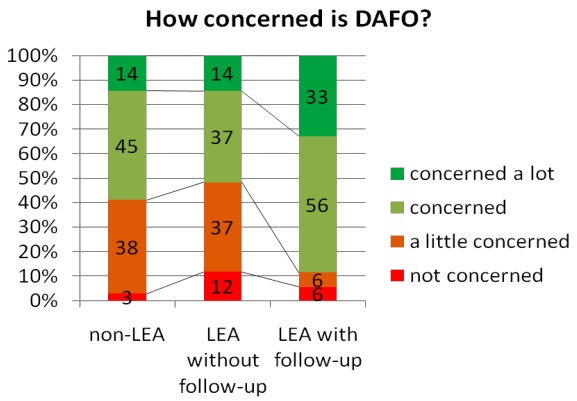
Do other villagers want to become PG-members?

- Consequently, **only 50%** of villagers who are not members of a PG **would like to become a member** (another **17%** are **not yet decided**, because they want to see results by PG members first). Out of those **30%** who **don't want** to become members, half **don't know enough** about the LEA, while others **don't have enough time, labour** and are **sceptical if they can do it.**

Reason want to be PG-members	HHs	Reason not want to be PG-members	HHs	Not yet decided	HHs
Want to know about new techniques	30	Don't know enough	12	Want to see the success of PG-members first	14
Want to get more products	12	Don't have time and be very busy with other job	6		
		Be afraid can not do	4		
		Don't have enough labor and can learnt with other villagers in the villlage	3		
Total	42	Total	25	Total	14
%	50	%	30	%	17

Is DAFO concerned about their work?
Opinions by villagers 1

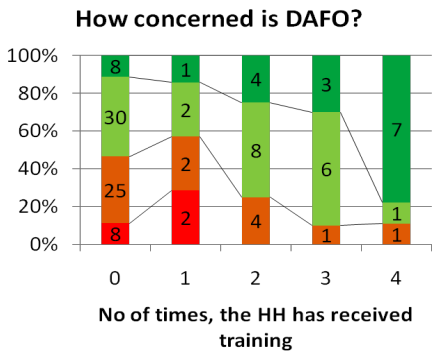
- Ratings by villagers on the **motivation** of **DAFO** are **neither** markedly **high nor** markedly **low**:

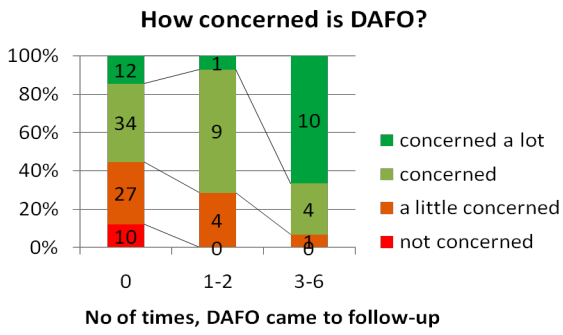


- Between **half to two thirds** of HHs feel that **DAFO** is **concerned** or very concerned about their work
- Villagers in **LEA villages** give **slightly higher** ratings to DAFO in terms of the question how **concerned** they are about their work
- The ratings however were **much higher** in LEA villages **where DAFO had done follow-up visits**

Is DAFO concerned about their work?
Opinions by villagers 2

- Looking at individual HHs, a similar picture emerges: **the more trainings and follow-up** HHs have received , **the more** they feel, **DAFO is concerned** about their work.

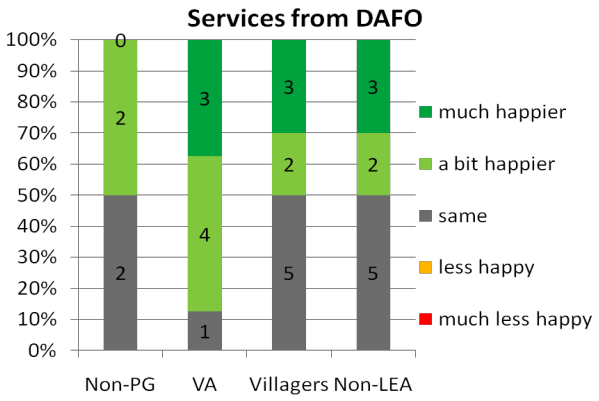




Change of Satisfaction with DAFO's services since the start of the LEA

Village Authorities in **LEA** villages see **more positive developments** about the work of DAFO **than in non-LEA villages**.

There was **no difference** between **Production Group members and** villagers, who are **not members**. Increasing satisfaction stems in most cases from **decreasing animal-sickness** and deaths and (less often mentioned) **better growth** of animals.



What do neighboring villages know and think about the LEA?

- **1 out of 4 villages** (Namor-Namveun Neua) **knew about the Lao Extension System** and could explain that DAFO staff will teach new techniques to villagers in LEA villages. They believed that it would be useful to have a VEW.

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PART 5:
CHOICE OF EXTENSION TOPICS

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Selection of Extension Topics and establishment of Production Groups

- Extension-**topics chosen** by Village Authorities **in** the Kum Ban meeting (**VES Intro**) have **all been offered** to villagers **in the Training-Needs Assessment**.
- **Generally**, for the topics, which were decided upon in the TNA, PGs were actually established:
  - Only in Namor-Pangsa, **2 PGs chosen** in the TNA (rice production and pig raising) were **discontinued**, because they **did not match with the priorities in the District Development Plan**. **Instead** a **cow** production Group was established, **even though** it did **not match** the **potentials and needs identified** in the Livelihood Assessment and TNA.

Rice in the lowlands, animals in the upland

- Both LEA villages, which are in the **plains**, chose **rice-production** as (one of their) topics, whereas all of the villages in the **mountains** chose **animal raising**
  - This indicates that the choice of topics was **done according to** the respective **potential** of the villages

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PART 6: PRODUCTION GROUPS MEMBERSHIP

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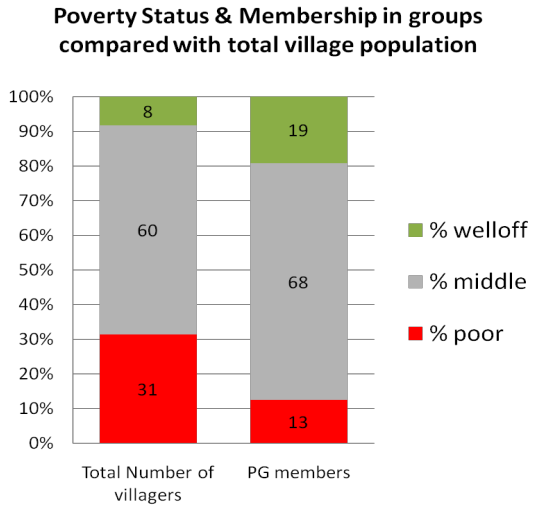
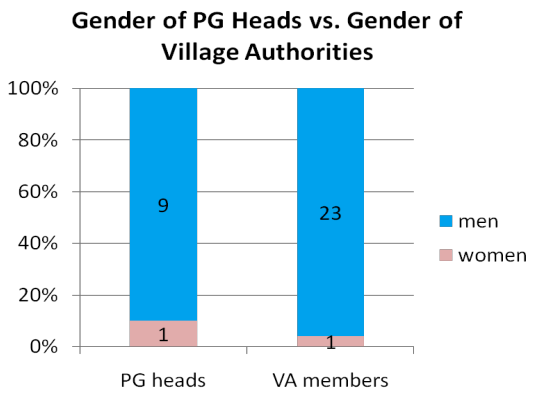
Poverty & Group membership



- **Poor farmers** are **underrepresented** as Production Group members with their share being just over one third of their share of the village population.
- **Middle-income farmers** are **slightly,** and **well-off farmers overrepresented**. (these clear tendencies could however not be found in the data of the first round.)

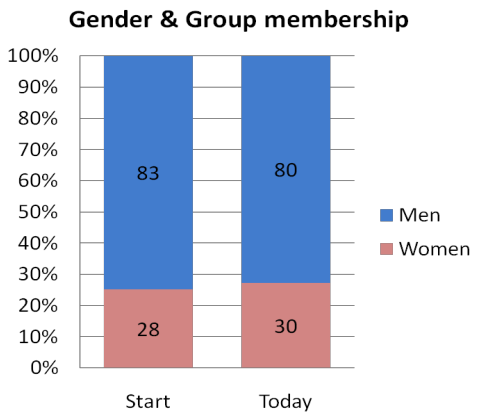
Gender of Group Heads



- Only **1 out of 10** (10%) Groups has a **women as group head**
  - This percentage is **approximately the same as** the **% of women as Village Authorities**.
  - ➢ **LEA** does **not achieve substantial strengthening of women** here.

Gender & Group membership

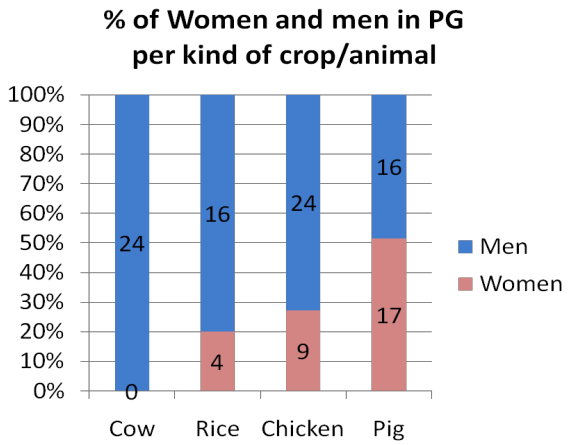
The **percentage of women** as members was around **25%** when groups started.



- Over time, the total number of members was **stable** (110 against 111).
- The **number of women** has slightly **increased** by 2 persons (+7%).
- On the other hand has the **number of men decreased** by 3 people (-4%). 2 of them were not interested any more and 1 did not have time.

Gender & Group membership per crop/animal

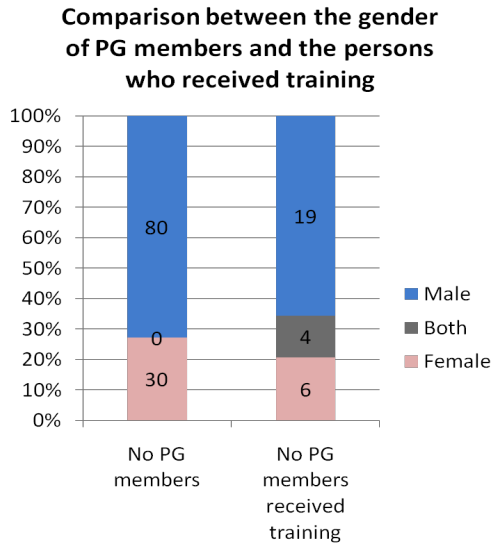
- For different types of extension topics, the percentage of women is different



- The **share of women** was **highest for pig** groups (~50%).
- For **rice and chicken** it was around **20-25%.**
- In **cow** PGs there was **not a single women**.

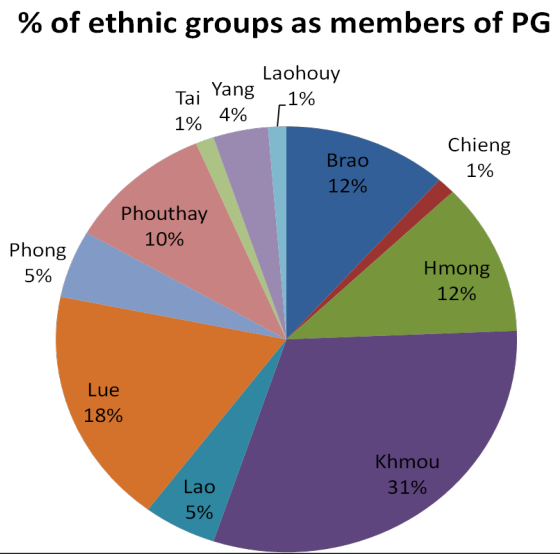
Who is really the PG-member?

Husband or wife?



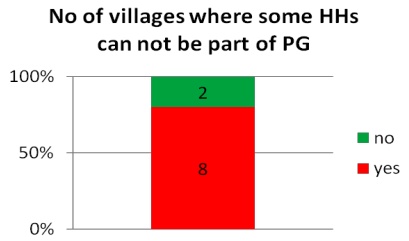
- Seemingly **men** are not only the **majority of PG-members** on the paper, but also **in reality**.
- The share of **women and men participating in trainings** was approximately the **same** as the share of PG-members with **some cases** in which **both** participated.

Ethnicity& Group membership



Almost all PG-members belong to ethnic minorities. 10 different ethnic groups are represented in the sample.

Exclusion from Production Groups



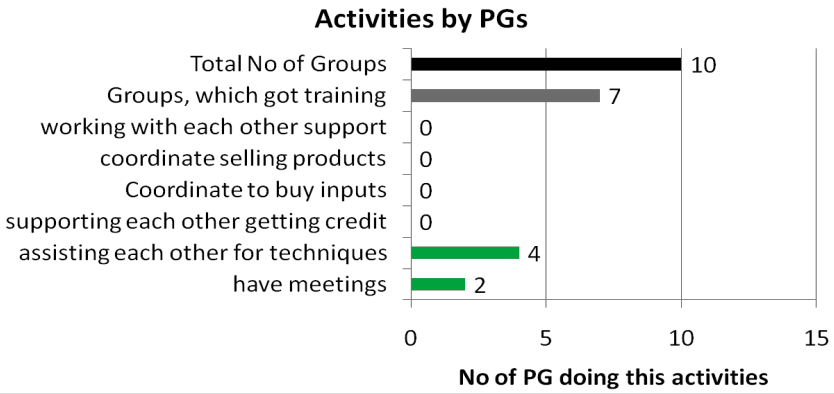
Reason can not be part of PG	No Villages
Only 10 HHs can be PG members	4
They were absent when PG members were chosen	2
Don't have the animals of the Production Group	2
One person can be member in only one group	1

- In **80%** of villages, **not all** HHs which wanted to enter a PG **could become member**. (mostly because of restricted numbers of participants or because the HH was not present during the selection)
- When asked for it, not a single HH mentioned, that specific groups of people were excluded from the extension system. Thus **exclusion of social groups** does **not** seem to be **a problem.**

Activities done by Production Groups

Activities by Production Groups are **quite limited**.

•Out of 7 PGs, which received training, only 2 groups had regular meetings (average 3 times per year) and 4 groups assisted each other for technical issues. None of the groups exchanged labour, coordinated for buying inputs or selling outputs or supported each other for getting credit.



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PART 7: TRAININGS OF PRODUCTION GROUP MEMBERS

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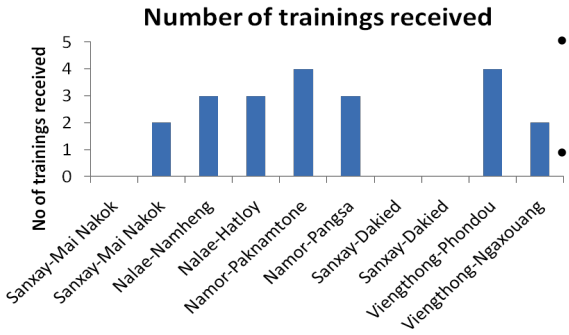
No of Trainings received

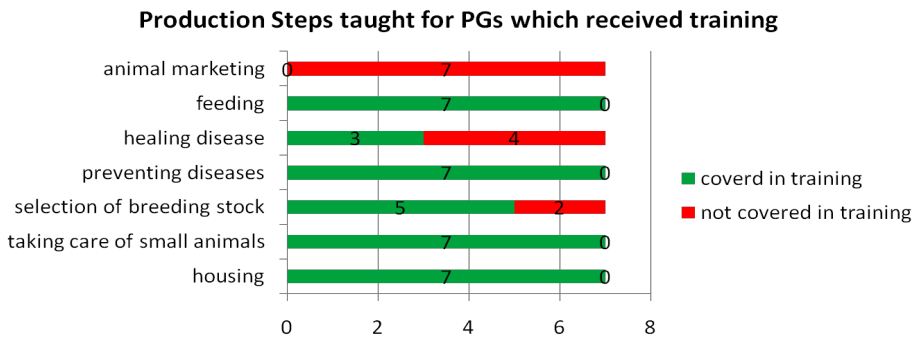
The **number of trainings** given to Production Groups has been **limited**.



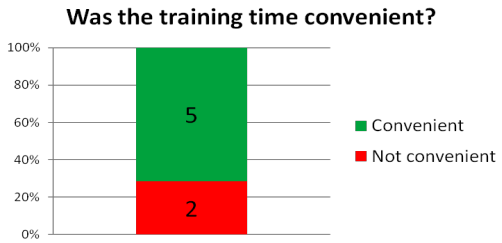
- **7 out of 10 groups** have already **received training** (in **average 2.7 times**).
- The 3 groups in Sanxay district did **not** get training **because** of there are **not enough DAFO staff** and many project's work needs to be done
- In general the **last trainings** had taken place **2 months before** data collection
- So far there has **not** been a single **training for rice production** in the sample.

Topics trained for animal-raising

- **In the trainings to PG, most Production Steps were covered**
  - **Exceptions: marketing** (**not** at all), **healing** diseases (**3 out of 7** groups) and selection of **breeding** stock (**5 out of 7** groups).
- That means that in a **single training**, **several production steps** were **covered**. This might be one of the reasons, why understanding by villagers was generally low.

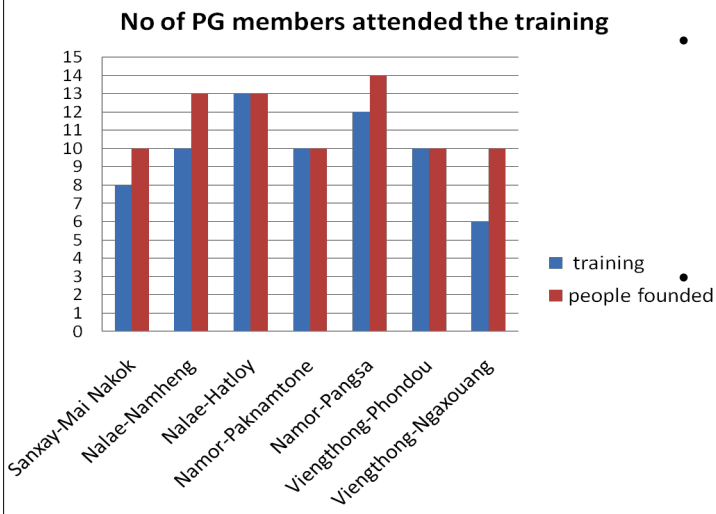


Timing of trainings



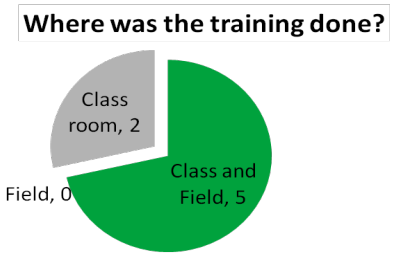
- Training time was **convenient** for **5** groups and **not convenient** for **2 groups** (because PG-members were busy with other jobs and informed too late).
- **4 out of 7** villages had **used the labour calendar** to define training-times.

Attendance of trainings by PG-members

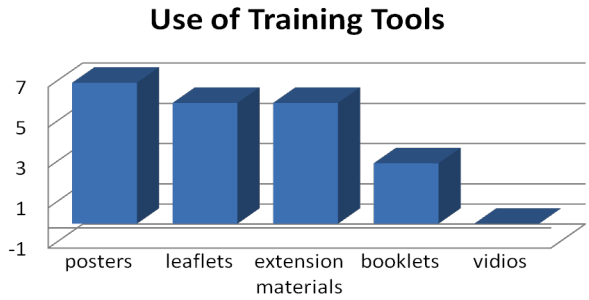


- According to information from the Focus-Group discussion, **almost all PG-members attended the trainings.**
- Information from HHs however lead to the conclusion that this might be true **in general** but not for each trainings.

Place and tools used in trainings

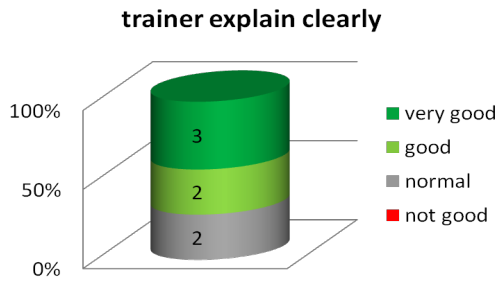


- In **most** villages (5), **trainings** were done both, in the **classroom and** in the **field**. Only in 2 villages, trainings took place in the class-room exclusively.

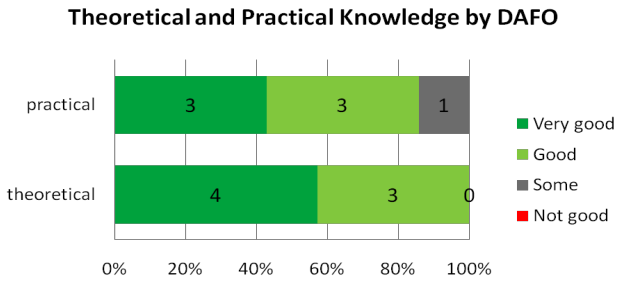


- In general the **use of training-tools** was fairly **good** (which might be one explanation for the relative success of the LEA). Only **Videos** (not at all) and **booklets** (4 out of 7 Groups) **lacked usage**.

Explanations by trainers



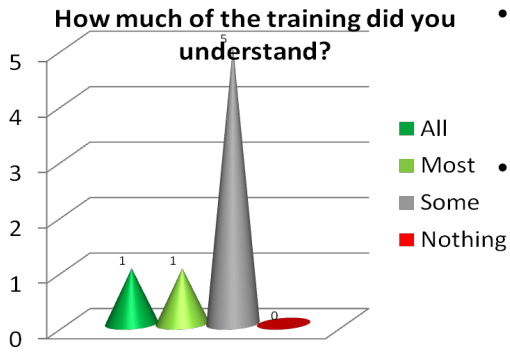
- The **explanations of trainers** were felt to be **good** in average (but not very good).



- **Knowledge by DAFO** was considered to be **good or very good** with slightly higher ratings for theoretical than for practical knowledge .

Understanding of trainings by PG-members

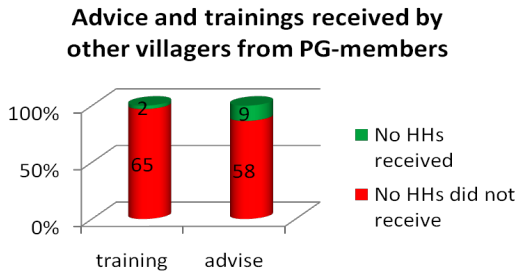
- The **understanding** of training-contents (according to villager's own judgement) was still **not very high**.



- Main reasons given were that:
  - **There was not enough practice** (3 PGs)
  - villagers' **education is low** (1 PG)
  - members did **not pay attention** during the training (1 PG).
- As mentioned already, an additional point is probably that **several Production Steps** are **taught within a single training**.
- Another reason is that **not all HHs** have **received follow-up visits** to consolidate the knowledge.

Training and advise received by other villagers from PG-members

- Only a **small minority** has **received advice** (13%) or **training** (3%) by Production Group members. If advice has been received it tended to be little intensive.



- **Still** non-PG members in LEA villages **changed their Production techniques** considerably more often than farmers in non-LEA villages (see chapter: change of techniques), which indicates that **farmer to farmer exchange does take place**.

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PART 8: CHANGE OF TECHNIQUES

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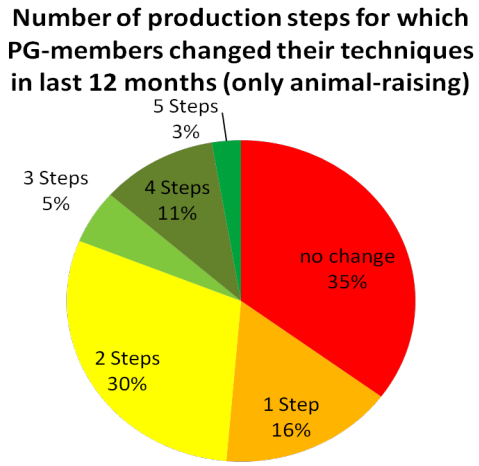
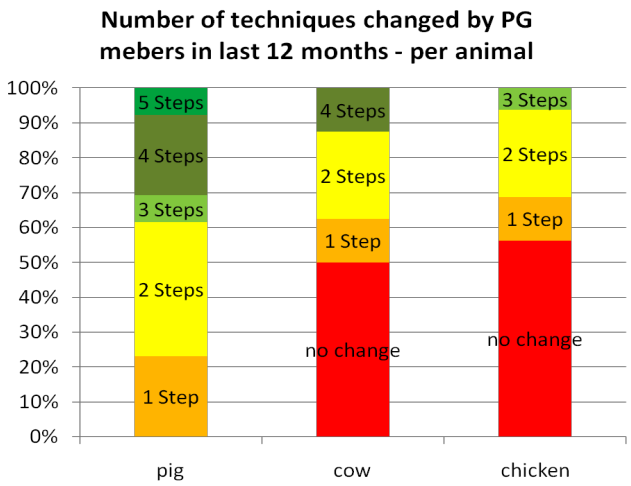
Changes of techniques by PG members



- The rate of **change of techniques by Production Group members** is **high**.
- Out of all PG members of animal-groups, **65%** did **changed** one or more **technique** in the last 12 months
- Most farmers changed **1 or 2 Production Steps**.

Changes of techniques by PG members – per animal

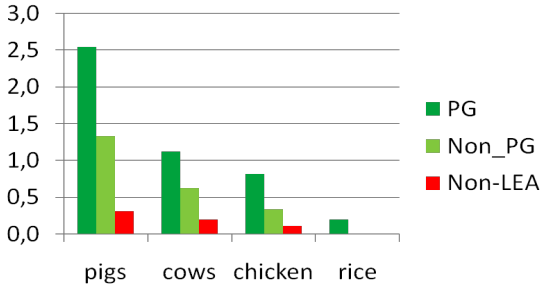


- Around **50%** of PG members for **cows and chicken changed** techniques, while **all** (!) members of **pig PGs changed** their techniques

Change of techniques – the LEA effect

- **Production Group members changed** their techniques of production **far more often than** villagers in **neighbouring villages**
- Also non PG members in LEA villages changed their techniques more often, which indicates that **farmer to farmer learning** within LEA villages took place

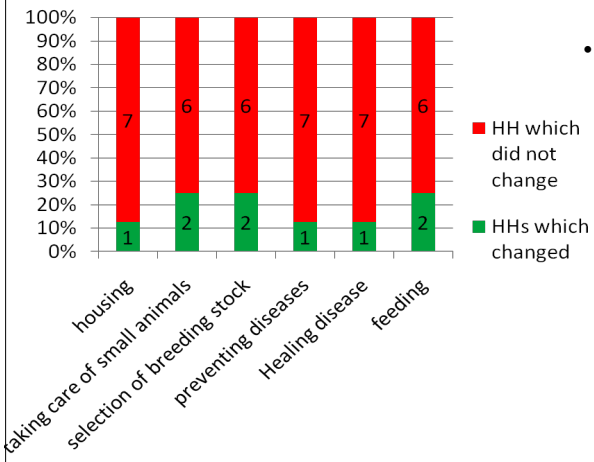
Number of techniques changed in the last 12 months



The rate of changes in production techniques by PG members and other villagers in LEA villages was considerably **higher for pigs** (average of 2,5 techniques changed) than for cows and for chicken.

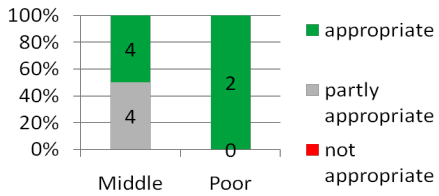
Cows - Production Steps 1

Production Steps changed by PG members Cows



- The technique taught was was felt to be **appropriate** by **60%** of farmers (40% said „partly approapriate“).
- The technique for each Production Step, was changed by 1 or 2 farmers in the sample.

Appropriateness of new techniques by Cow groups



Cows - Production Steps 2

changed techniques, problems and appropriateness

Housing	
changed technique	No HHs
Build pen	3

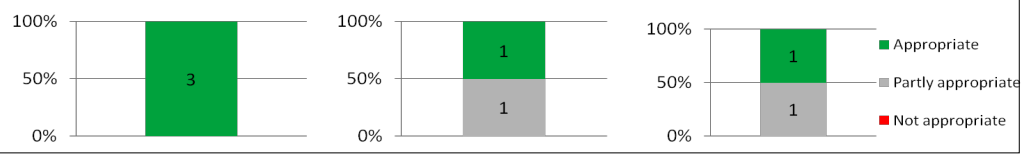
Taking care of small animals	
changed technique	No HHs
Taking care of calf until navel is dry	1
Let cow give birth inside the village	1

Selection of breeding stock	
changed technique	No HHs
Select breeding from different families (lines)	1
Select the big cows	1

Problems / why not used?	PGs
Don't have many animals	1

Problems / why not used?	PGs
Gave birth in the forest	1
Don't have many animals	1
Some step are difficult to do	1

Problems / why not used?	PGs
Have many animals	1
Don't have many animals	1



Cows - Production Steps 3

changed techniques, problems and appropriateness

Preventing diseases	
changed technique	No HHs
Vaccine cow for prevention of disease	2

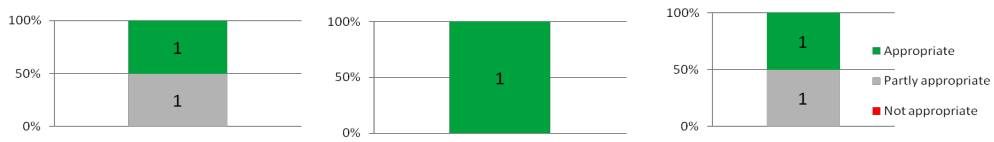
Healing disease	
changed technique	No HHs
Treatment of sick cows by injecting	1
Keep sick animal separate for treatment	1
Put dead animals in the ground	1

Feeding	
changed technique	No HHs
Feed animals with grass	2

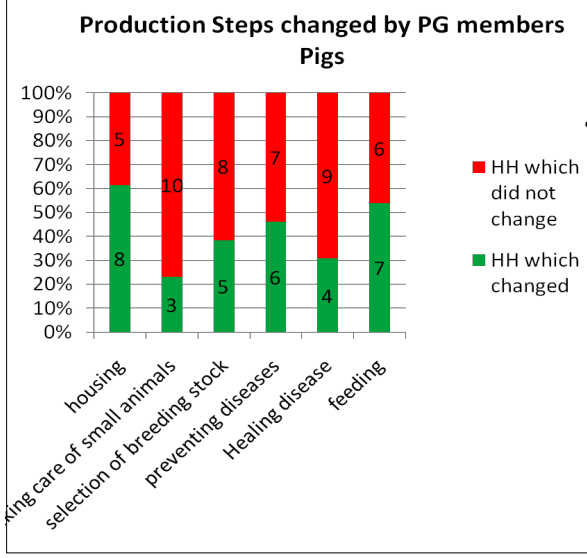
Problems / why not used?	PGs
Don't want to vaccinate animals every year	1
Before vaccinated 1 time per year, don't want to vaccinate animals if they are not sick	1

Problems / why not used?	PGs
No problems	0

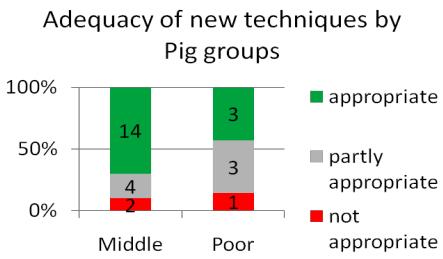
Problems / why not used?	PGs
Lack of raw material	1
Animals are raised far from the village	1



Pigs - Production Steps 1



- The technique taught was was felt to be **appropriate** by **63%** of farmers (26% said „partly approapriate“ and 11% found it inappropriate).
- For all Production Steps, techniques were **changed**, **especially** for **housing, preventing diseases and feeding**



Pigs - Production Steps 2

changed techniques, problems and appropriateness

Housing	
changed technique	No HHs
Build pen away from the ground	7
Build pen	5
Build half of pen away from the ground	2
Separate pen for piglet and pig	2
Build pen on the slope land	1

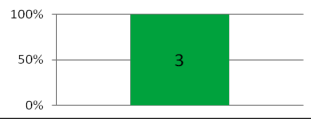
Problems / why not used?	PGs
No problems	

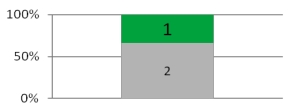
Taking care of small animals	
changed technique	No HHs
Castrate piglet	3
Feed piglet with mother	2
Cut teeth of piglet	2
Cut tail of piglet	2
Separate food for piglet	1
Separate pen for piglet	1
Take leaf under give birth place	1
Let's pig give birth in the forest then take piglet to pen for taking care	1
Taking care of piglet	1

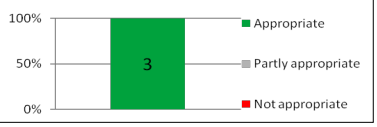
Problems / why not used?	PGs
Gave born in the forest	**1**
Some step are difficult to do	**1**

Selection of breeding stock	
changed technique	No HHs
Select big pig	4
Select beautiful pig	3
Select strong pigs	3
Select long feet pigs	3
Select tall pig	2
Select sow which has 10 breasts	2
Select the fat animals	2
Select the sow which can give birth to many piglets	1

Problems / why not used?	PGs
It is difficult to do	**1**







Pigs - Production Steps 3

changed techniques, problems and appropriateness

Preventing diseases	
changed technique	No HHs
Vaccinate pig to prevent disease	10
Separate pigs coming from outside	3
Separate sick pigs	2
Look after health of pigs	1
Clean the pen	1

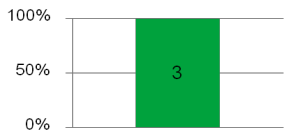
Healing disease	
changed technique	No HHs
put dead pigs underground	2
Treat sick pigs	2
Separate sick pigs	1
Look after health of pigs	1

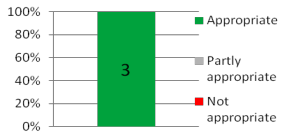
Feeding	
changed technique	No HHs
Give pigs mixed food	9
Give food 2 times/day	4
Give food 3 times/day	3
Feed animals by glass	2
Look after when animals eat food	1

Problems / why not used?	PGs
No problems	0

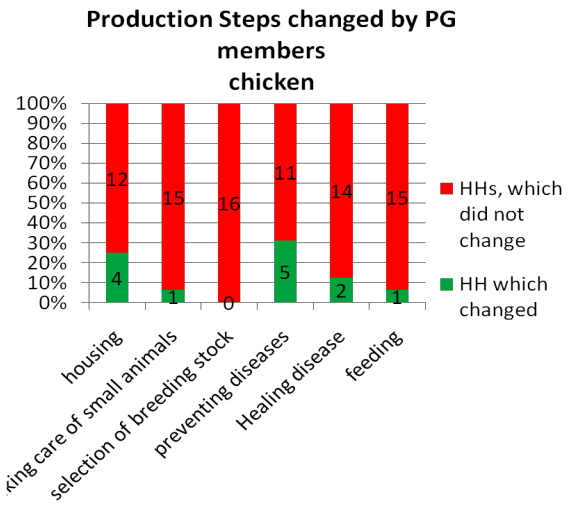
Problems / why not used?	PGs
No problems	0

Problems / why not used?	PGs
Pigs died due to mix cassava in the food	1

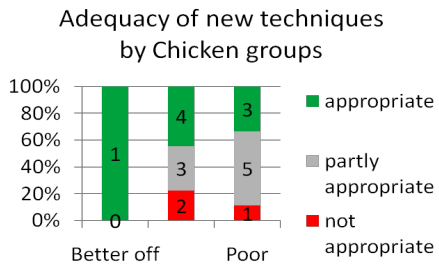




Chicken - Production Steps 1



- The technique taught was was felt to be **appropriate** by only **42%** of farmers (another 42% said „partly approapriate“ and 16% found it inappropriate).
- Techniques were **changed** mainly for **preventing diseases** and **housing**.



Chicken - Production Steps 2

changed techniques, problems and appropriateness

Housing	
changed technique	No HHs
Build the pen away from the ground	4
Build the pen which be taller than before	2
Make shelves to the chicken to sleep	1
Make place for breeding of eggs	1
Clean the pen	1

Taking care of small animals	
changed technique	No HHs
Feed chick with their mother in the pen	1

Selection of breeding stock	
changed technique	No HH s
No changes	0

Problems / why not used?	PGs
Can use the old pen	1

Problems / why not used?	PGs
Don't have money	1
Don't understand training	1
Some step are difficult to do	1

Problems / why not used?	PGs
It is difficult to do	**1**

Chicken - Production Steps 3

changed techniques, problems and appropriateness

Preventing diseases	
changed technique	No HHs
Vaccinate chicken for prevention of disease	4

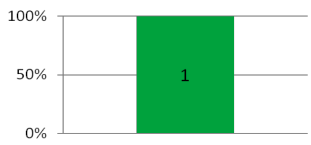
Healing disease	
changed technique	No HHs
Separate sick chicken from others	1
Put dead chicks under ground	1
Treat sick chicks	1
Separate chicks coming from the from outside	1

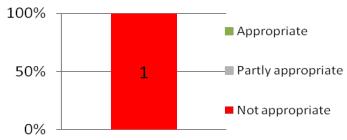
Feeding	
changed technique	No HHs
Give food 2 times/day	1

Problems / why not used?	PGs
Don't have money to buy vaccine	**1**

Problems / why not used?	PGs
No problems	0

Problems / why not used?	PGs
Don't understand training	**1**
Don't have blender for corn	1





Why are pig PGs more successfull?

- There are several hypotheses why pig-raising leads to more changes in techniques than chicken and cows:
- The average **number** of **trainings and follow-up** visits for pigs is **higher** than for cows and chicken (see chart on the right)
- There is a **higher % of women** as members
- The taught **technique** is **more appropriate** (especially compared to chicken)
- Changes in Pig-raising techniques have a **slightly stronger effect on Production**.

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PART 9: TRAININGS & FOLLOW-UP AS DETERMINANT OF RATES OF CHANGE

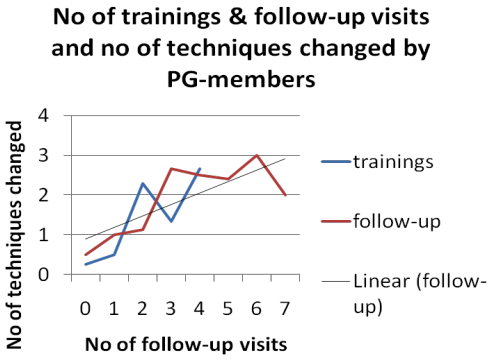
66

Trainings and follow-up visits

The more, the better! (1)

Both, the number of trainings and the number of follow-up visits received show a strong correlation with the changed techniques.
The **more trainings and the more follow-up visits**, the **more farmers change their techniques**.

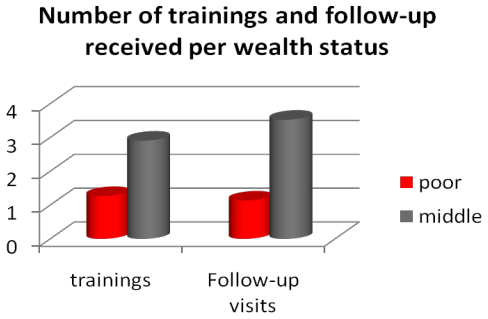
Trainings **without** or with only one **follow-up** visit tended to be **less effective** than trainings with more than 1 follow-up visit.



Wealth Status and Trainings & Follow-up received

Poor PG members participated in much **less trainings** and (even more pronounced) received much **less follow-up visits** by DAFO than middle-income farmers. (no data for well-off farmers)

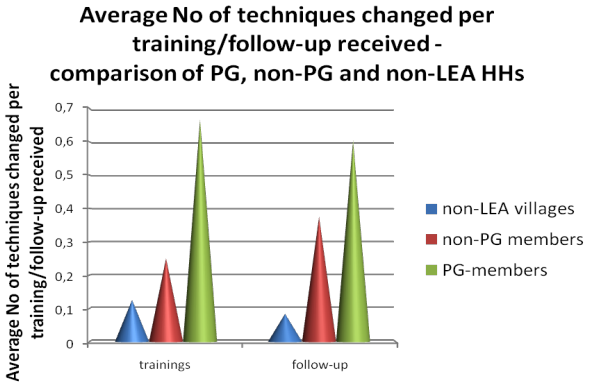
Comment: last year's data does not show such strong tendencies. They might be due to sampling effects.



Consequently the poor farmers **changed their techniques less often** than middle-income farmers (0,27 against 0,39). This difference is actually even lower than expected.

Efficiency of the LEA and other approaches

Trainings and follow-up visits within the framework of the **LEA** seem to be **more efficient than alternative approaches.** Production Group members changed more techniques than farmers, which had received other trainings and follow-up visits.



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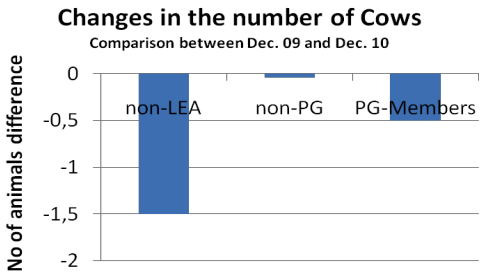
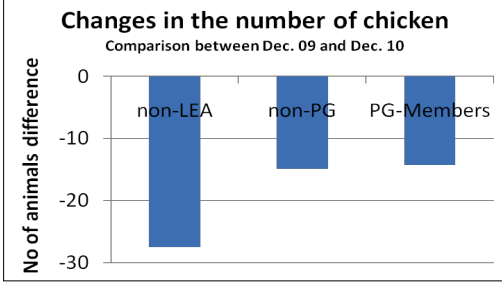
PART 10: IMPACTS ON PRODUCTION, INCOME AND WORK-LOAD

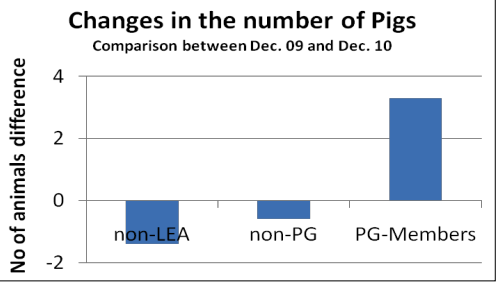
70

Change of number of animals

In tendeny (with differences for different animals), the **number of animals** has **developed more positively** (or rather: less negatively) **for PG-member HHs** than for non-PG HHs and (even more pronounced) in comparison with HHs in neighbouring villages.



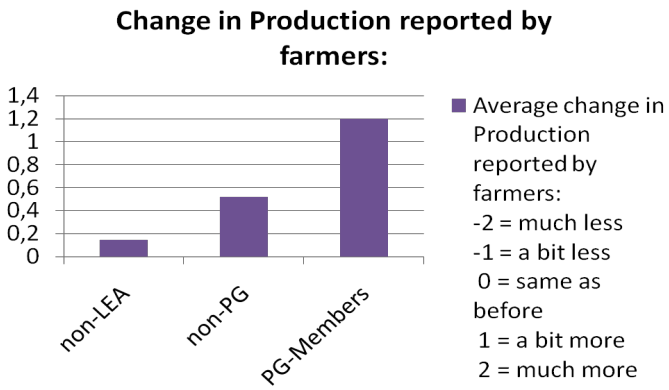




Changes in Production according to farmers

comparison of PG-members, other villagers and neighbouring villages

- **Production Group members** report a **clearly more postive development of their Production** than non Production Group members and farmers in neighbouring villages.

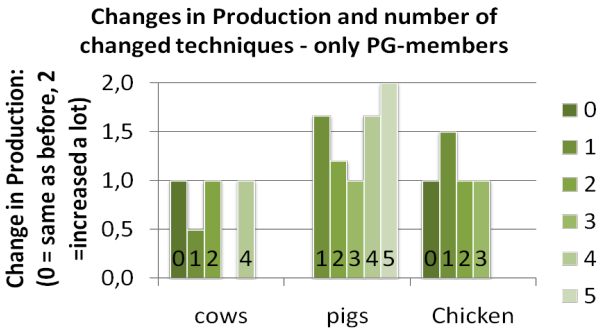


- Also **non-PG members in LEA villages** reported **more positive** developments **than** farmers in **neighbouring villages**, again indicating that useful farmer to farmer exchange is taking place.

Changes in Production according to farmers

Does improved Production stem from changed techniques?

- In the graph on the right hand side, you see the number of Production Techniques changed (in different green shades from 0-5) for cows, pigs and chicken and their correlation with the increase or decrease of production reported by farmers

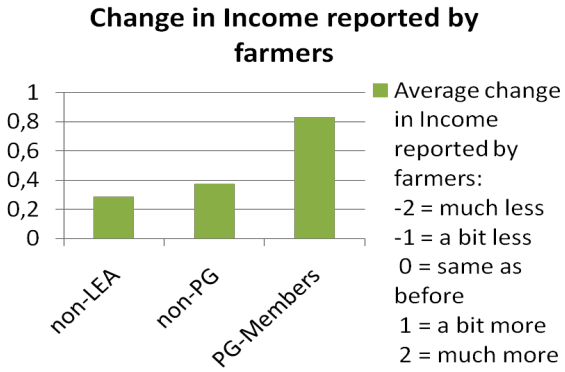


- There is **no** clear relationship between the **number of Production Techniques**, which farmers changed and the self-reported **increase in Production**.
- **Pig-Production** shows **only slightly higher increase** in production than cows and chicken when compared with an equal number of changed Production Steps.

Changes in Income according to farmers

comparison of PG-members, other villagers and neighbouring villages

- **Production Group members** report a **clearly more postive development of their income** than non Production Group members and farmers in neighbouring villages. (yet the effect is lower than for Production)

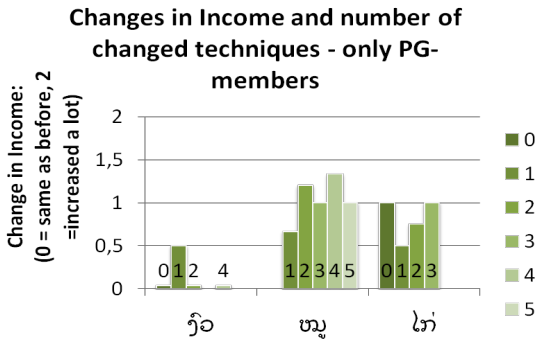


- **Non-PG members in LEA villages** reported only **slightly more positive** developments **than** farmers in **neighbouring villages**.

Changes in Income according to farmers

Does improved Production stem from changed techniques?

- In the graph on the right hand side, you see the number of Production Techniques changed (in different green shades from 0-5) for cows, pigs and chicken and their correlation with the increase or decrease of income reported by farmers

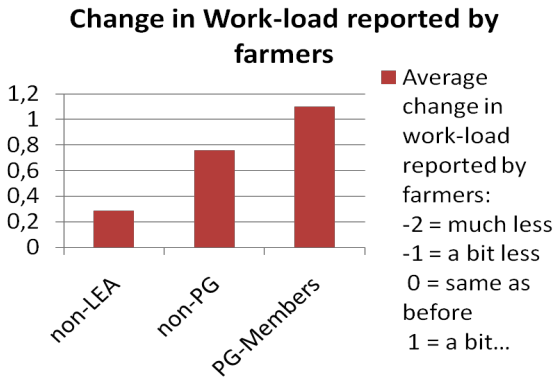


- Also here there is **no** clear relationship between the **number of Production Techniques**, which farmers changed and the self-reported **increase in Income**.
- **Pig-Production** shows **the same increase** in production than **chicken** when compared with an equal number of changed Production Steps. There has been **no increase in income for cows**.

Changes in Work-Load according to farmers

comparison of PG-members, other villagers and neighbouring villages

- **Production Group members** report a **clearly stronger increase in work-load** than non Production Group members and farmers in neighbouring villages.

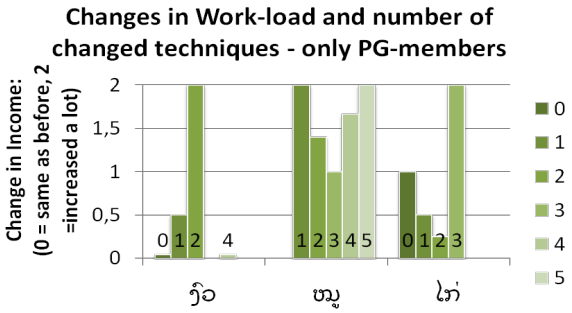


- Also **non-PG members in LEA villages** reported **a higher increase in work-load than farmers in neighbouring villages.**

Changes in Work-load according to farmers

Does improved Production stem from changed techniques?

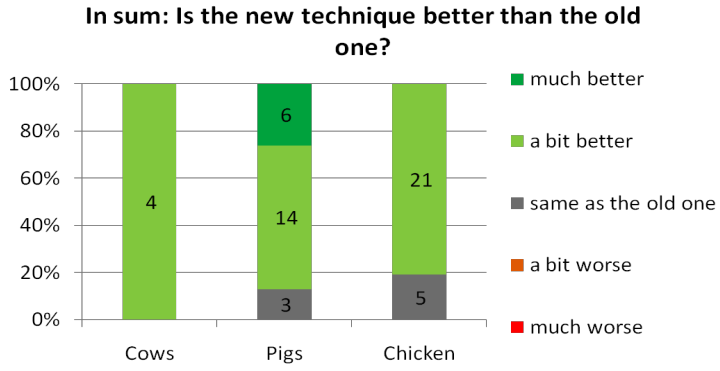
- In the graph on the right hand side, you see the number of Production Techniques changed (in different green shades from 0-5) for cows, pigs and chicken and their correlation with the increase or decrease of work-load reported by farmers



- Also here there is **no** clear relationship between the **number of Production Techniques**, which farmers changed and the increase in work-load.
- **Pig-Production** shows the **highest increase in work-load**, slighly higher than for **chicken** and considerably higher than for **cows**.

So all in all, is the new technique better?

Still, there was **not a single HH** in the sample, who **believed that** the **old technique** was **better** than the new one.
The vast majority of HHs said that the **new one** is not much, but **a bit better**.



The End