Facilitator's Resource Book

~ for Permaculture ~

TRAINING AND ASSESSMENT

Tools for creative workshops and project follow-up

Developed by IDEP Foundation with GreenHand

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THE AIM OF THIS BOOK IS...

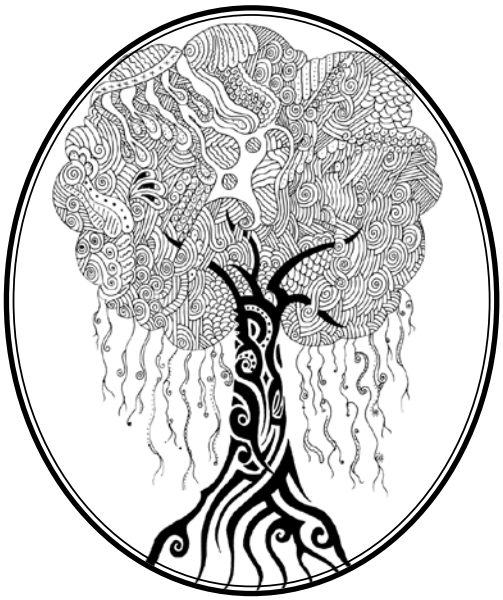
To supply facilitators with useful tools to create dynamic workshops and learning environments. By using creative facilitation techniques, learning activities can be maximized and workshops will be well received and remembered as enjoyable learning experiences.

This Facilitator's Resource Book also includes background information and tools for ensuring that program follow-up, monitoring, and evaluation is conducted in a way that effectively involves the key stakeholders and the participating communities.

It also includes over 30 informative 'handouts' which can easily be photocopied by local facilitators for distribution to project participants as workshop support materials. This Facilitator's Resource Book for Permaculture has been designed to work in conjunction with the companion books *'A Resource Book for Permaculture - Solutions for Sustainable Lifestyles'* and *'The Permaculture Facilitator's Handbook'.*

The materials contained in this book have been drawn from many sources, including Permaculture projects and publications worldwide as well as practitioners in Indonesia. For input or suggestions on the book's contents or usage, please contact us at the address printed in this book. We appreciate your feedback.

We have tried to be as factual and accurate as possible. We hope that this book will provide many benefits for those that use it. However, any problems or faults that occur as a result of practical use of the information, are not the responsibility of IDEP Foundation, or of the book's authors, artists, contributors, and/or publishers.



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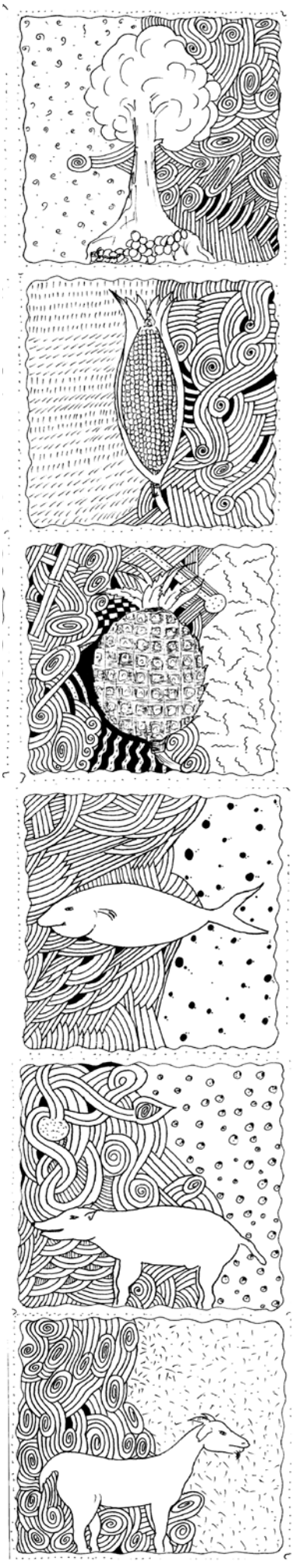

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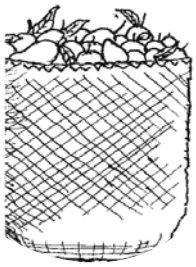

Forward

This resource book is a 'toolbox' with various techniques and resources that can be helpful in delivering effective workshops, disseminating information to communities where workshops are held, and ensuring that the facilitators, participants, local communities, and local environments are getting the most out of the workshops delivered.

The first section of this book is about creative facilitation. It includes several ideas about how facilitators can create dynamic learning environments. As you know facilitation is not easy, it takes time and experience to learn how people learn, how groups work, and how to make the most of group learning experiences. These techniques can make that process easier.

Participants will remember a lot more of the important information from a workshop if the materials are presented in a fun and lively way.

Achieving a joyful learning environment is not difficult. Facilitators simply need techniques and tools to help keep the participants focussed on and interested in the workshop material.

The creative facilitation techniques in this book – adapted to suit your workshops needs – should help to make workshop facilitation and group dynamics easier and more effective. Have a look at the options and try them out with your friends. The more opportunities you have to practice creative facilitation techniques, the more comfortable and successful you will be using them. Also you will likely come up with all sorts of new wonderful ideas based on the same principles.

The second section of this book contains several easy to photocopy handouts which can be distributed during workshops or at community meetings to help disseminate some simple techniques for sustainable living to the wider community.

Finally, this book contains an important section on how to work with communities and project stakeholders to ensure that the results of your trainings are being well received and making a real difference on the ground. Permaculture is a holistic system for sustainable development with many inter-connected components. Sometimes it takes years for all of the benefits of a Permaculture training to be known and seen. As the natural environment and resources in the area begin to be replenished and the human relationships with those resources become more sustainable, the healthier environment supports the growth and health of more sustainable resources. Therefore follow-up, monitoring, and evaluation are critical components of any Permaculture training. This is the time when facilitators will really learn what aspects of their trainings are most successful and how they can create the most benefits through their efforts.

The developers of this book, and all of the books in the Permaculture facilitator's series, sincerely hope that these publications will be useful in supporting the important work of facilitators throughout the region.

Petra Schneider,
Director of IDEP Foundation

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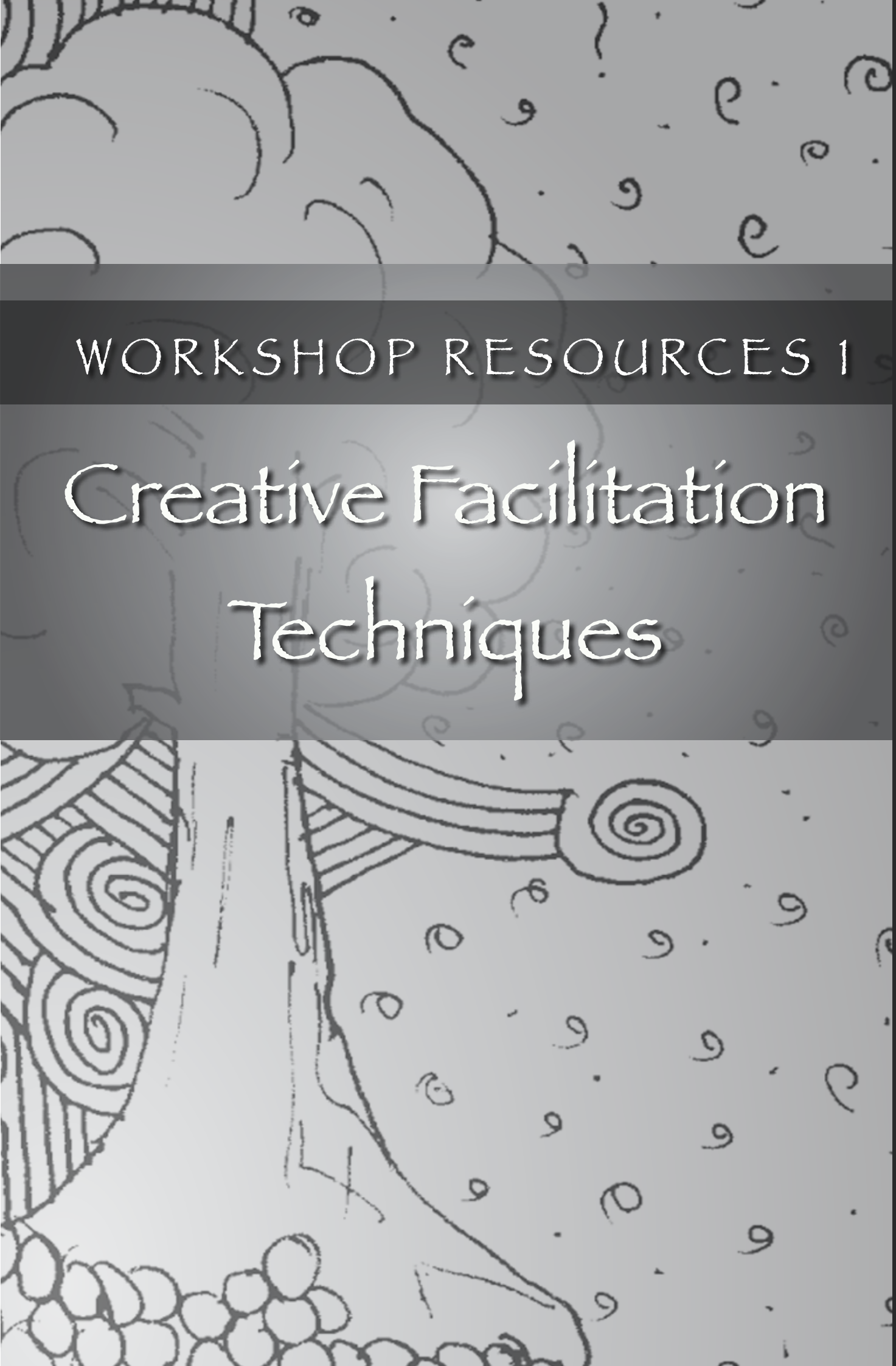


Resources for Permaculture Workshops and Follow Up - Creative Facilitation Techniques

Notes...

Introduction

What is a facilitator?

- A facilitator does not stand in front of a group and lecture.
- A facilitator is an active unbiased member of the learning process.
- The role of the facilitator is to skillfully assist a group of people to understand their common objectives and to help them to achieve these objectives without taking sides in any argument.
- The facilitator guides and helps achieve understanding and consensus.

In many ways a facilitator is like a midwife:
- **A midwife assists in the process of creation but is not the producer of the end result.**

The basic skills of a facilitator

- Following good meeting practice.
- Timekeeping.
- Following an agreed agenda.
- Assisting a group to brainstorm and problem solve.

An experienced facilitator will also have the following skills:

- The ability to intervene in a way that adds creativity to a discussion rather than leading the discussion and taking away creativity from the group.
- The ability to understand the group process and dynamics – successfully address inequalities in the group dynamic, such as:
  - Who is dominating in the group and how stop them?
  - Who is withdrawn and how to involve them?
  - Who looks bored and how to draw them in to the process?

Good facilitation skills cannot just "be taught" – they need to be learned.

The more we practice creative facilitation techniques the more comfortable we will become within ourselves and with the workshop participants.

The most important lesson of all is to have FUN.

- Workshops need to be enjoyable for both the workshop participants and the workshop facilitator - a joyful learning environment will greatly assist the learning process.
- Workshop participants will remember vital information if the information is presented in a lively way.

To get the most from a workshop, all participants need to be comfortable with one another.

If workshop participants are not introduced properly, sit passively at tables, or are not given interesting tasks they will lose focus very quickly. The workshop dynamic will be less effective and the learning environment can be dull and unproductive.

If the facilitator just stands in front of a workshop group and lectures this will only result in bored participants who will probably stop listening after 10-15 minutes.

This is not an effective way to share information and knowledge. Try instead to link fun and energizing activities to the workshop material. These activities can be used to introduce important concepts and/or used as a lead-in to the workshop exercises.

A good facilitator will design workshops that combine learning and information sharing with interactive tools for group work.

Facilitators know they are successful when they look at a group of happy, smiling faces.

Achieving a happy workshop is not difficult. The facilitator simply needs to build up a repertoire of techniques or tools to help keep the workshop participants focused on and interested in the workshop material.

Good facilitation techniques should...

- Help the participants to be comfortable with each other.
- Create a fun and interesting learning environment.
- Boost the energy levels of workshop participants.
- Organize interesting and productive group work activities.
- Use participatory activities which enable dynamic reviews of what has been learnt.
- Increase group activity so that workshop participants can expand on the new knowledge they have received and that knowledge locally.

This chapter includes an introduction to creative facilitation skills as well as some examples of facilitation techniques and tools which you can adapt to best suit your workshop and learning activities.

All facilitation techniques should be adapted to local cultural environments.

You are the facilitator.

Choose what you think will work, play with it and create your own fun games to energize the workshop participants.

As the facilitator it is up to you to choose what will and won't work with the participants of your workshop.

About planning and adapting creative facilitation

It is good to plan and try out creative techniques before using them at a workshop.

- Practice and design new ideas with your friends or work colleagues.
- Discuss ways to adapt the techniques so they suit the workshop material and support the general aims and outcomes of the workshop.
- Make sure that any techniques you use are culturally appropriate and do not offend any local ethnic, religious, or gender sensibilities.

This chapter introduces several types of creative facilitation techniques including...

- **Icebreakers**
- **Energizers**
- **Forming groups**
- **Living metaphors**
- **Dynamic lead-ins**
- **Dynamic reviews**
- **Brainstorms**

Notes...

Icebreakers

Participants often enter a workshop as strangers and can be apprehensive about what will happen during the workshop. Right from the beginning of the workshop it is important to take some time to allow the participants to get to know one another, to get to know the facilitator(s), and to create a sense of team working and camaraderie.

Icebreakers are techniques which can:

- Help participants get to know each other and become comfortable with each other at the beginning of a workshop.
- Help energize participants at the beginning of a new stage of a workshop.
- Encourage team work and creative problem solving.

Icebreaker no. 1 - Stand up if you . . .

This is a useful opening exercise. As the facilitator you can ask a series of fun, general questions or some more specific questions relevant to the workshop. This way as a facilitator you will get a an idea of the experience levels of the workshop participants.

Materials required

No materials are for this activity.

The facilitator needs to think about a list of questions before running the exercise.

These can be:

- General questions to get the participants laughing and offering a little bit of information about themselves.
- More specific questions linked to the workshop material.

Time required

This is a fairly quick exercise. The time needed will be determined by the number of questions that are asked.

What to do

Ask the participants questions using the following opening words: "Stand up if you …"

For example: Stand up if you …

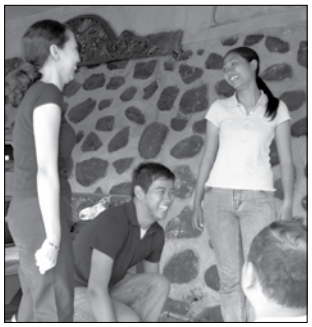
… are already married.

… are still single.

… are looking for a marriage partner.

It is best if each question is a little more risqué than the last. But remember to make sure that the questions are culturally and gender appropriate and do not offend any of the participants.

You can also design questions to bring out participants' talents and highlight diversity or common characteristics of participants' existing knowledge.



For example: Stand up if you …

… can speak more than one/two/three languages.

… can cook (name a favorite local dish).

… can dance (name a local dance).

You can also use questions that will tell you what prior experience people have in the areas that the course will cover:

For example: Stand up if you …

… grow your own vegetables.

… raise chickens, cows, or other animals.

… make money from your vegetables or animals.

… use compost for your gardens.

… want to learn how to make more money from your crops.

Variation

One variation is to open the question using the following words: "Have you ever…?" You can use a mix of fun questions as well as questions relating to the workshop material.

For example: Have you ever …

… climbed to the highest point in your country?

… been displaced from a place where you lived?

… sung karaoke?

… gone without a shower for more than two days?

… been to a workshop?

… found it difficult to find drinking water for your family?

… used organic fertilizer?

Facilitator's tips

- This should be a quick, fun activity to help the participants laugh and help them to feel comfortable.
- You can follow this activity with other icebreaker exercises such as 'Introduce your partner', 'Do you know me?', or 'Introduction through musical chairs'.

Icebreaker no. 2 - Introduce your partner

This icebreaker provides time for participants to get to know each other and gives them an opportunity to practice their inquiry skills.

Materials required

Participants will need a notebook/card and a pen/pencil to record their answers.

Write some example questions on large piece of paper so that everyone can see them.

Example questions could include:

- What is your name?
- What is your background?
- Why are you involved in this workshop?
- What is the best learning experience you have ever had?
- What do you hope to learn from this workshop?
- Do you have previous experience in the subject matter of this workshop?

Time required

- 10 minutes for interviews.
- Each participant is given a maximum of 5 minutes to introduce their partner.

What to do

1. Divide the group into two-person teams by asking them to them find a partner that they know the least about.
2. The pairs then interview each other for about 10 minutes.
3. After the interviews, reassemble the group into a big circle and have each participant introduce their partner to the group. Ask both participants to stand up for the introduction.

Facilitator's tips

- To avoid this process taking up too much time the introductions should be brief. Let the participants know that the introduction of each partner should take a maximum of 5 minutes.
- You can encourage the participants to applaud the introductions, which will help build their enthusiasm.

Icebreaker no. 3 - Circle of friends

This is a great greeting and departure exercise for large groups of participants who are attending a short seminar or a workshop where the chance of everyone meeting everyone at the same time again is unlikely.

Time required

- This is a fairly quick exercise
- The time required will depend on the number of participants

What to do

1. Form two large circles, one outer circle and one inner circle - the participants in the inner circle should be facing participants in the outer circle.
2. Ask the participants in each circle to take one step in opposite directions - ie. the outer circle participants step to the right while the inner circle step to the left.
3. The participants greet each new person as the circle continues to move around.
4. The participants can greet each other by simply saying one word that they think expresses something they feel right now or something that is important to remember.

Facilitator's tips

- To speed up the process divide the participants by assigning them number 1 or 2.
- Those given the number 1 form the outer circle.
- Those given the number 2 form the inner circle.

Energizers

There are times when people's energy gets low during workshops, particularly after a long lecture, after a break or after lunch time when participants are tired because they are still digesting. Energizers are fast and fun ways to:

- Get people laughing.
- Put people at ease.
- Get participants refocused on the workshop.

Energizer no. 1 - Truth and lies

Materials required

Each participant needs a note pad/card and pen/pencil.

Time required

This is a fairly quick exercise - each participant needs about 2-3 minutes. The entire energizer usually doesn't take more than 20 minutes.

What to do

1. Participants write on cards/note pads two truths about themselves and one lie.
2. The participants then walk around sharing with one another their three statements - **during this time participants should not reveal which of the statements is a lie.** During this sharing it is the goal of the participants to:
   a) Convince others that their lie is true.
   b) Guess the correct lie of the other participants.

3. The participants gather in a circle and the first person reads their statements to everyone. For example:
   "I was born in Malaysia."
   "I have three children."
   "I am a vegetarian."

4. **The group then tries to guess which of the three statements is not true** - at the end of each statement ask for a vote through a show of hands. "Who thinks this statement is true? Raise your hand."
5. The participant then reveals which of the statements is untrue.

Facilitator's tips

- For large groups (30+) it is best to split into smaller groups for this exercise.
- Give examples (like the above) of statements and remind people that they should use short statements.

Energizer no. 2 - Knots of people

This is a fun activity in which participants work together to solve a problem.

Time required

This is a fairly quick exercise - the time needed depends on how long it takes for the first group to untangle itself.

What to do

1. Divide the group into teams of 8-12 people (note: less people than this per group won't work).
2. Have each person in the team raise their left hand in the air. Then have each person join right hands with another person in the team - but it must be someone that is NOT standing immediately to the left or right of them.
3. Then have each person join left hands with another person in the team - but again it has to be someone who is NOT standing immediately to the left or right and it has to be a new person on the team than they already joined their right hands with.
4. The teams have to untangle themselves without letting go of each other's hands.
    - They may have to loosen their grips a little to allow for twisting and turning.
    - They may also have to step over or under other people.
5. The first group to untangle their knot is the winner.

Facilitator's tips

There are four possible solutions to the knot:

- One large circle with people facing either direction.
- Two interlocking circles.
- A figure eight.
- A circle within a circle.

Energizer no. 3 - Earthquake!

This exercise works best with large groups of more than 20 participants.

Time required

This is a fairly quick exercise. The facilitator can stop the activity after a few rounds and/or once the participants are feeling refreshed.

What to do

1. Divide the workshop participants into three equal groups. It is easiest to assign each participant a number (1, 2, 3) and participants form their groups based on the number they have been assigned.
2. All of the participants from Group 1 are asked to find a partner from Group 2. These partners face one another, raise their arms and place their palms together forming a "house".
3. Each of the participants from group 3 then choose a "house" and "hide" underneath it.
4. The facilitator then yells "QUAKE" and the participants hiding under the "houses" must find another partner who was also hiding under a "house".
5. At the same time the participants who were forming "houses" need to scramble and find a "new house" to hide underneath. Note: Those that were forming houses in the first round are not allowed to form a house again.
6. Each time this is done 1/3 of the participants are left without a "house" in which to hide and they are eliminated from the game.
7. Continue until there are only three participants left – two forming a house and one participant hiding underneath.

Facilitator's tips

- The facilitator may need to set some ground rules in order to avoid this game becoming too chaotic – no pushing, punching, kicking, etc.
- Participants who were forming "houses" cannot form a house again. They must try and find a "new house" to hide under. Similarly, participants who were hiding under a "house" cannot hide under a "house" again.
- To avoid confusion tell participants who were hiding under the "houses" to shout out "over here, over here" in order to identify each other.

Energizer no. 4 - Line-up

This is an activity that is good for groups of 16 people or more.

Materials required

The facilitator will need to think of criteria for the line ups (see examples below).

Time required

This is a fairly quick exercise. Time needed will depend on how many times the exercise is run. Each run of the exercise usually takes about 5-7 minutes.

What to do

1. Organize the participants into two or more groups of 8-20 people.
2. The facilitator tells the participants that in the line-up they will have a chance to learn things about one another they may never think to ask.
3. The facilitator tells the groups that this is a competition, and that when they are asked to line-up in a particular way the first group to do so wins, so they need to get into the lines as quickly as possible. **For example:** Tell the groups to line up by height (shortest to tallest) and to all clap when they have finished.

   Other line up criteria possibilities:

   - Line up in order by shoe size.
   - Line up in order by length of arm's reach.
   - Line up in order alphabetically by first name.
   - Line up in order by date of birth from January to December.
   - Line up in order by number of brothers and sisters you have.
   - Line up in order by age.
   - Line up in order by length of time in your current occupation.
   - Line up in order by the number of animals you own.

5. When any one group finishes the line-up all of that group's members should clap to indicate that they have finished.

Facilitator's tips

- Conduct a practice round first.
- It is best if the facilitator uses criteria that relates to the workshop material.

- Use this activity periodically throughout a long session and ask groups to come up with their own way of letting you know they have finished (e.g. yell, hum a song, put up their hands, etc). This can add a lot fun to the exercise.

Forming groups

Group work is especially useful with large workshops, creative thinking exercises, and brainstorms. Group work will also make workshops more manageable. Unless it is culturally inappropriate, groups should be established with gender and age balance.

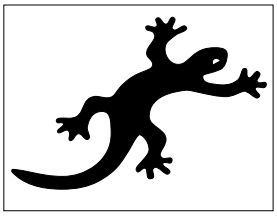
Note: If the facilitator notices that in any group there are dominant participants while the others are not taking an active role in discussions and activities, then the facilitator may form new groups or swap some of the participants around.

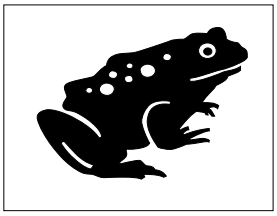
Forming groups no. 1 - Animal scramble

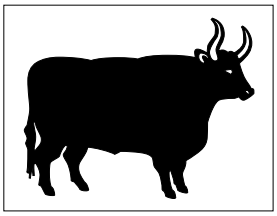
This is a way to form groups that is fun and relevant for agriculture programs.

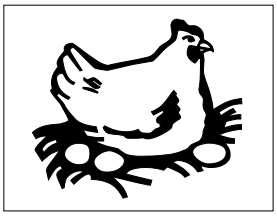
Materials required

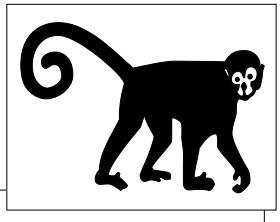
- Decide how many groups you want to form.
- Create small 'animal cards' with as many types of animals as work groups needed for the exercise. For example, if you have 30 participants and need 5 groups you can create 6 cards for animal card – rooster, cow, goat, horse, cat. Choose animals that everyone knows and are culturally appropriate.
- Write the same number of slips as the number of people that will form each group. Fold the slips and place them in a bag, basket, or box.











Time required

This is a fairly quick exercise, it takes about 10 minutes.

What to do

1. Ask each participant to take one slip of paper - tell them that they are not allowed to open the paper yet.
2. The facilitator instructs everyone to open their slips of paper and read the word written on the paper but to keep the word a secret.
3. Now the facilitator instructs the participants to find the rest of their friends – but there is no talking allowed. Instead they have to make the sound of the animal on their card. As soon as two participants find one another they should stick together and continue calling out until they find all of their animal friends.

Facilitator's tips

- Use animals that everyone knows the sound for - the exercise may be confusing with abstract animals or animals from other areas.
- Choose appropriate animals. In some cultures use of dogs or pigs may be inappropriate, particularly in Islamic environments.

Forming groups no. 2 - Picture puzzles

Materials required

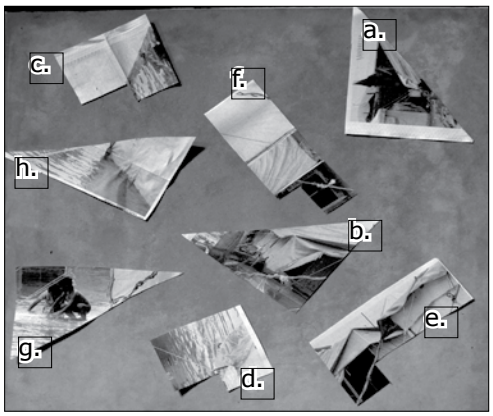
- Decide how many groups you want to form.
- Create 'picture puzzles' with as many different puzzles as work groups needed for the exercise. For example, if you need 5 groups you will need to make 5 different picture puzzles. The total number of all of the puzzle pieces should match the total number of participants.
- Pictures that could be used to make the puzzles could be:
  - Pictures that are relevant to the workshop material cut into pieces.
  - 4 or 5 frames of a comic - IDEP Community Based Disaster Management comics can be used or other comic strips from newspapers.
- Place all of the puzzle pieces in a bag, basket, or box.

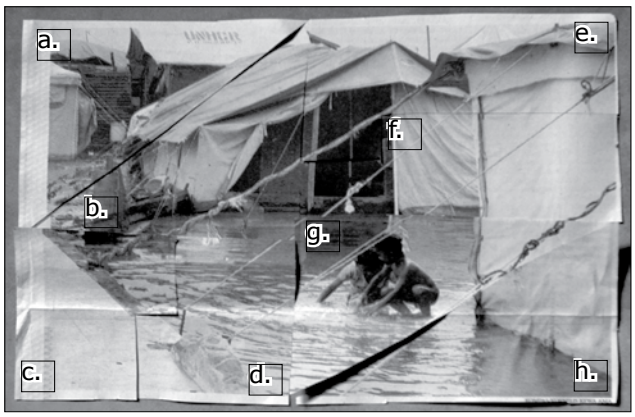
Time required

This is a fairly quick exercise and should only take about 10 minutes

What to do

1. Each participant takes a turn picking a puzzle piece out of the container.
2. After each person has chosen one, the participants begin to search for others with puzzle pieces that can be joined to make the picture or comic strip.
3. After the participants have found everyone in their group, they need to recreate the pictures or put the comic strip story back in order.
4. Once they are done, the newly formed group can sit down to work together on a creative thinking exercise or design project.





Facilitator's tips

- It is best if the pictures or comic strips used are relevant to the workshop materials.
- Once the groups have formed, they could brainstorm the subject matter of the pictures or comics.

Living metaphors

Living metaphors physically simulate important concepts or problems.

Living metaphors no. 1 - Rearrange the classroom

This exercise is designed to achieve greater cooperation and coordination among the workshop participants.

Time required

This exercise should take about 10-15 minutes.

What to do

1. During a workshop break, the facilitator should set the workshop space up with the seating in rows and the facilitator's desk, podium, or flip charts at the BACK of the class.
2. When the workshop participants return to the workshop the facilitator should ask them to take a seat, and then walk behind them and begin the presentation of the next section of the workshop. **The participants will need to turn around to see what is going on** - they will probably be confused and uncomfortable.
3. The facilitator should then explain that in organizations or even at the community level change is often implemented in the same way. Community members are not an active part of the change process, but pushed into change by someone they cannot see and who decides, on their behalf, what they think is best for them. Explain that this way of instigating change is about as effective as conducting a workshop in this 'backwards' way.
4. Explain that many formal organizations, including government departments, operate in the same way which makes communication and coordination difficult. And that productive changes occur much better by using good communication and cooperative teams.
5. Ask the participants to rearrange the space so that more effective learning, communication, and teamwork can take place.
6. At the next break, ask the participants to rearrange the room again in a way that will further improve communication.
7. This can be repeated a few times, each time the new arrangement should reinforce a concept they have learned in the workshop - ie. natural patterns, etc.

Living metaphors no. 2 - The Web of life

This living metaphor activity simulates and deepens understanding about how the diverse elements of a living ecosystem are interconnected.

Materials required

- Index cards or name tags.
- Marker pens.
- Safety pins.
- A ball of strong string or string equivalent in length to 5m per participant.

Time required

This exercise should take about 30-40 minutes including the explanations.

What to do

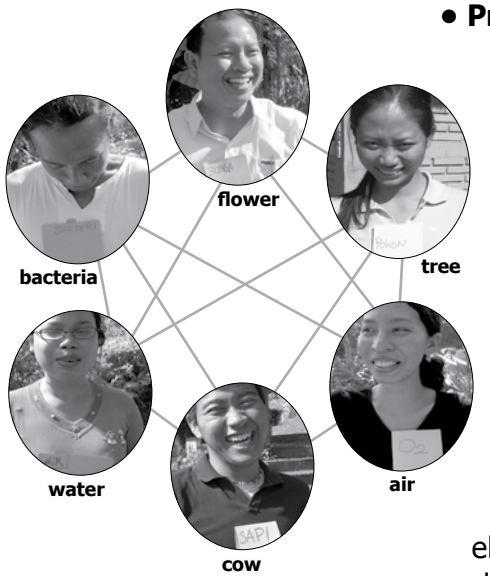
A. Orientation and identification of elements

1. Conduct a brief discussion with the participants about the interconnections in nature and elements in those interconnected relationships.

2. Together, choose a local ecosystem - e.g. the ecosystem of the community where the workshop is being held such as a forest, coastal, or a rice paddy ecosystem as a focal point.

3. Have each participant in the class identify and call out a key element of the local ecosystem. Write each of their answers down on a separate index card. The facilitator may need to prompt the participants to ensure that all of the important elements of the ecosystem are covered:

    - **Abiotic elements** (soil, water, sun, air).
    - **Producers** (plants, trees).
    - **Primary consumers** (animals that eat the plants).
    - **Secondary consumers** (animals that eat other animals).
    - **Decomposers** (which turn the waste of the plants and animals into nutrients).



4. The cards are shuffled and each participant and the facilitator draws a card from the deck, with the names facing down so that they don't know which card they are choosing.

5. Ask everyone to look at their card, think about what that element needs to survive and what that element contributes to the environment, then pin the card to their shirts or insert the card into their name tag holders.

B. Make the 'web of life'


1


2


3


5


6

1. Ask everyone to form a circle.
2. The facilitator starts the process by taking the ball of string and looking around the circle for an element that either needs their element for survival or that their element needs to survive. The facilitator throws the ball of string to this person while explaining the relationship. For example:

   If you are water, you may choose rice and say aloud:
   "The rice plant needs water to grow".

   Or, you might select a tree and say:
   "Water needs tree roots to stay in the ground".

3. The person who is now holding the ball of string looks around the circle, finds an element that either needs their element for survival or that their element needs to survive. While holding on to a point in the string with one hand, the person says what the relationship is, and throws the ball of string to the element they have chosen.
4. Continue this process until all the elements are interconnected and no one can think of any more connections that can be made. Note: Many of the elements are likely to be included in the web of relationships several times.
5. Now everyone, still holding on to the sections of string, takes a step backward to make all the strands of string taut, and observes the web of relationships that has been created.
6. Demonstrate the interdependence of the various elements to the system, ask one element to gently begin tugging until the other elements feel the tug. Explain that the tugging represents pressure on the ecosystem through natural events (drought, etc) or human-made events (new plant introduction that crowds out the natural plants, etc). How does it affect the system?
7. To emphasize the importance of each element in an ecosystem, ask participants to pick a component that seems the least important and have the person representing that element let go of his or her section of string. This represents the disappearance of a part of the system. How does this affect the rest of the system?

Other questions to consider might include:

- Could any part of the web be replaced? If so, with what?
- Are any members of the web in competition? How and for what?
- How do people influence the web?

C. 'Web of life' follow up discussion

On the board write a few practices that strongly affect the ecosystem and the plant and animal species within that system. For example, discuss the effects of:

- Chemical pesticide use.
- Land clearing.
- Throwing trash into rivers.

Living metaphors no. 2b - Web of life "global problems"

Using the same processes described earlier, you can explore **relationships between seemingly separate environmental and social problems.**

Choose elements that are environmental and social problems such as:

- Air pollution.
- Unsustainable use of natural resources.
- Poor education.
- Corruption.
- Human-made disasters.
- Poverty.
- Poor health.
- Etc.

When throwing the ball of string, the person gives a statement describing how the problem they represents is connected to the problem represented by another person in the circle.

For example:

- Poverty causes unsustainable resource use.
- Unsustainable use of forest resources causes the forests to disappear.
- When the forests disappear, there is flooding.
- Air pollution makes people sick.
- Sick children are poorer learners.

Living metaphors no. 2c - Web of life "community connections"

If the course is being held for people of a specific community, you can use the same processes described earlier to explore relationships within a community.

Used at the beginning of a course:

- Each person introduces themselves and their role in the community.
- While keeping hold of a section of string in one hand, they toss the ball to another person in the group and expresses how their roles are interdependent.
- The process continues, linking the individuals in the circle with multiple strands as everyone is introduced.
- The facilitator then pulls on the starting thread and asks the group if anyone's hand failed to move.
- The facilitator can then point out that this web is a physical metaphor for the interdependencies of the group and a key components of the processes they will be learning during the workshop.

Used at the end of a course:

- Each person tosses the ball of string to another person, stating something about how they have connected or been moved by this person or how they hope to keep cooperating with them after the course.

Living metaphors no. 3 - Chinese whispers

This activity can increase understanding about the need to communicate directly instead of relying on second-hand information or rumors.

This exercise can be used as a fun way to introduce new workshop topics.

Time required

This exercise should take about 10 minutes

What to do

1. The facilitator chooses a short sentence that is related to the workshop material. For example:

   "This ecosystem is in danger, but we can save it if we work together."

2. The participants form a large circle and the facilitator starts by whispering a statement to the first participant.
3. This participant whispers the statement to the person next to them and so on throughout the whole group.
4. At the end the last person announces the message they beard and the facilitator writes this up on a board or flip chart. Then the facilitator writes down what the original message was - invariably the message has changed dramatically as it passes from ear to ear.
5. At this stage the facilitator explains that when we want to gather information we must talk directly to the source and not simply rely on information that we have heard by way of rumor or through others.






Facilitator's tips

- Participants are not allowed to say the message more than once.
- The message needs to be whispered so that other participants do not hear.
- Start with a sentence that is not too long.

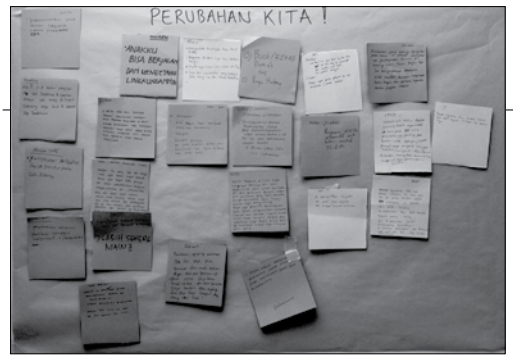
Dynamic lead-ins

'Dynamic lead-ins' can help the facilitator to introduce new topics or identify critical issues in a participatory way.

Dynamic lead-ins can provide background information for an upcoming workshop topic or reinforce previous knowledge of a topic.

Dynamic lead-ins no. 1 - Learning contract

- Every workshop or exercise can be reinforced by starting with a 'Learning contract'.
- Learning contracts help everyone involved to understand the goals of the activity and to consciously agree that they will work together toward reaching the goals.



Materials required

- Flip chart.
- Markers.
- Index cards.
- Pens.

Time required

This exercise should take about 15 minutes.

What to do

1. Start the workshop/exercise by stating the goal of the workshop/exercise, what the participants will learn, and what they will be able to do after the workshop/ exercise.
2. Explain that this is a learning contract between the facilitator and the participants and that it is the facilitator's job to strive to ensure that the contract is fulfilled.
3. Write up this contract on poster paper and keep it in a prominent place throughout the workshop. Ask the participants to come forward and sign the contract.
4. Next hand out index cards to each of the participants and ask them to write down their own personal expectations of what they hope to learn from the workshop. The cards can be stuck onto another piece of large paper.
5. At the end of the workshop/exercise the facilitator can return to both the learning contract and the participants' learning expectations and together with the participants check whether both have been fulfilled.

Dynamic lead-ins no. 2 - Pre and post exercise quizzes

Give a quiz at the beginning of an exercise. This can help the facilitator evaluate the level of understanding about a specific issue while focusing the participants' attention on the upcoming session. The same quiz can be given again at the end of the session to see change in understanding.

Materials required

- Flip chart.
- Index cards.
- Masking tape.
- Markers.
- Pens.

Time required

This exercise should take about 15 minutes.

What to do

1. The facilitator will need to prepare multiple choice or true and false quizzes with about 6-10 questions which relate to an upcoming workshop exercise. They should be written out on large paper big enough for everyone to see.
2. The participants or groups are given time to answer the quiz questions.
3. When they are ready, the facilitator can get a show of hands (vote) to indicate how many people choose "a, b, c, or d" or "true or false" to the questions.
4. The facilitator should keep track of the number of votes given for each possible answer on the board so everyone can see the results.
5. Then the facilitator continues with the exercise.
6. At the end of the exercise the facilitator can ask the participants if they would like to change any of their answers. This will provide a tangible record of how much they have just learned.

Example 1: Creative thinking exercise "Various building materials"

These building materials are sustainable resources

- Bamboo. TRUE • FALSE
- Coconut wood. TRUE • FALSE
- Asbestos. TRUE • FALSE
- Rainforest wood. TRUE • FALSE

Example 2: "Sustainable farming"

Chemical pesticides:	Sustainable farming:	Unsustainable farming :
(a) make people healthy.	(a) uses only one kind of crop.	(a) uses chemicals.
(b) make people unhealthy.	(b) uses many different crops.	(b) uses natural fertilizers.
(c) make soil healthy.	(c) uses imported resources.	(c) damages the soil.
(d) make soil unhealthy.	(d) uses local resources.	(d) makes soil healthy.

Dynamic reviews

Dynamic reviews no. 1 - Ball toss review

This is a physically active exercise that can be used at the end of the day or at the end of a session. It is especially useful as an energizer after a session that involves a lot of technical material or requires heavy concentration.

Materials required

A ball (a soft ball is best).

Time required

This exercise should take about 15-20 minutes.

Dynamic review no. 1a - "Valuable lessons learned" ball toss

1. The facilitator asks the workshop participants to form a circle.
2. The facilitator starts by saying what they thought was the most valuable lesson or concept they learned that day, and then throws the ball to another participant.
3. The participant states the most valuable or important lesson/concept they learned that day and throws to another participants and so on until all participants have expressed their valuable lessons/concepts learned.

Dynamic review no. 1b - "Concepts in action" ball toss

1. The facilitator asks the workshop participants to form a circle.
2. The facilitator starts by stating a concept that relates to the workshop/exercise, and then throws the ball to another participant.
3. The participant gives an example of that concept in action, and then states another concept and throws the ball to another participants and so on.

Example:

- The person throwing the ball yells: "Soil improvement".
- The person receiving the ball says: "Using organic compost".
- This person then passes the ball to another participant and yells out a new concept: "Recycling".

Facilitator's tips

If someone receives the ball but does not have an example ready, they can 'pass' by passing the ball to a different person and simply repeating the question.

Dynamic review no. 1c - "Process" ball toss

1. After an exercise has been conducted about the steps in a particular activity, the facilitator asks the workshop participants to form a circle.
2. The facilitator starts by explaining the first step in the process that has been covered in the exercise and then throws the ball to another participant.
3. The participant explains the next step in the process and then throws to another participants, and so on.

Example (making a garden):

- The person throwing the ball yells: "Design the garden".
- The person receiving the ball says: "Make raised garden beds".
- The person receiving the ball says: "Mulch the garden beds".
- The person receiving the ball says: "Plant the seedlings".
- The person receiving the ball says: "Use compost and mulch".
- The person receiving the ball says: "Water in the morning".
- The person receiving the ball says: "Use natural pest control", etc.

Dynamic reviews no. 2 - Calm down!

Sometimes a group needs to slow down after an intensive session. This exercise will help everyone to consider the benefits of new learning.

Time required

This exercise should take about 10 minutes.

What to do

1. Ask the participants to get into a comfortable position and close their eyes.
2. Then, have them reflect on what is important about what they have just learned and how it might be helpful to them.
3. After about five minutes, say a key word or phase that relates to the main ideas that have been covered, and ask them to reflect on that for a couple of minutes.
4. Repeat one or two more key words/phrases, leaving a couple of minutes for reflection each time.
5. Then gather the group into a circle and invite them to share what they believe are the most important or valuable aspects of the ideas they have just reflected on, and how they can best use these ideas in their own life.

Facilitator's tips

This may seem like slack time, but reflection is one of the most powerful learning techniques available. Use it!

Dynamic reviews no. 3 - "The game show"

Materials required

- Prepare multiple choice questions with A, B, C, or D answers based on the workshop material (about 3-5 questions per group).
- Place a paper sign designating A, B, C, or D in the four corners of the space.
- Prepare two seats at the front of the space:
    - **One for the facilitator** (game show host).
    - **One for the participant** (game show contestant) – the "hot seat".

Time required

This exercise should take about 30-45 minutes.

What to do

1. Divide the participants into groups with about the same number of people in each group. Explain that the objective of the game is to be the group that answers the most questions correctly.
2. Explain the rules of the game:
    - Each group has two chances to "**Ask a friend**" - ask another member of their group if they know the answer to the question.
    - Each group also has two chances to "**Ask the audience**" - ask all the participants to stand up and walk to the corner of the room with the letter corresponding to the answer they think is correct.
3. Ask the first group to send a representative to the "hot seat". The facilitator asks a question giving four multiple choice answers (A, B, C, or D).
    - **If the "contestant" answers the question correctly** they return to their group and another member of the same group comes to the front.
    - **If the "contestant" does not answer the question correctly** they return to the group and the facilitator calls for a representative from the other group to sit in the "hot seat".
    - **If the "contestant" is not sure of the answer** they can choose to use one of their group's opportunities to either "Ask the audience" or "Ask a friend". Remember: Each group is only allowed to use the "Ask the audience" or "Ask a friend" twice.
4. The facilitator adds up the number of correct answers for each group and announces the winner at the end of the exercise.

Facilitator's tips

For each group ask a couple of easy questions first then ask progressively more difficult questions.

Brainstorms

Brainstorming is a good way to generate creative ideas to solve a problem.

The key results of a brainstorm may be:

- A complete solution to a problem.
- A list of ideas for an approach that may lead to a subsequent solution.
- A list of ideas resulting in a plan to find a solution.

Brainstorms are best done in groups of 3-6 people in sessions that adhere to a number of important rules.

The "Guidelines for successful brainstorming" can be presented and posted in the workshop area to remind the participants each time they do a brainstorm session.

Guidelines for successful brainstorming

Brainstorm rule no 1: Withhold judgment

All ideas are potentially good - even seemingly foolish ideas can spark off discussion about better ones. Therefore, do not judge the ideas until after the brainstorm is complete - note down all the ideas. Judging ideas takes up brain power which could better be devoted to creating new ideas.

Brainstorm rule no 2: Encourage "wild" ideas

It's easier to adjust a wild idea than to think of an immediately valid one. Present bizarre ideas to see what they inspire - the 'wilder' the idea the better.

Brainstorm rule no 3: Quantity not quality

Go for quantity of ideas and narrow down the list later. Strive to generate as many ideas as possible - the more creative ideas a group has to choose from the better. If the number of ideas at the end of the session is very large, there is a greater chance of finding a really good idea among them. Keep each idea short, do not describe it in detail - just capture its essence. Think fast, reflect later.

Brainstorm rule no 4: Build on others ideas

Build and expand on the ideas of others - add extra thoughts to each idea and use other people's ideas as inspiration for your own. Combine several of the suggested ideas to explore new possibilities. The most creative people are also good listeners.

Brainstorm rule no 5: Every person and idea has equal worth

Every person has a valid and unique perspective. You can always put forward ideas purely to spark off other people. Participate, even if you need to write your idea on paper. Each idea presented belongs to the group, so it is the group's responsibility to ensure all members feel able to contribute freely and confidently.

Brainstorm no. 1 - The magic charm

This activity is a good way to encourage and energize both individual and group brainstorming sessions.

Time required

This activity should take about 30-60 minutes.

What to do

1. Form workgroups.
2. Ask the workgroups to go outside and find small objects that attract their attention or exemplifies a natural pattern (e.g. a branch, pebble, shell, leaf, etc).
3. Once the groups have reassembled in the workshop space the facilitator tells the participants that they have just found a "magic charm" that will allow them to **change three things in their world.** They can change anything they want.
4. Ask the workgroups to come up with three ideas of how they would use their "magic charms" to change:
   - Themselves.
   - Their work or an important project.
   - Their house.
   - Their community.
   - Their country, etc.
5. The groups then share their three wishes with everyone at the workshop.
6. Following this the participants can join together for brainstorming and to discuss:
   - Three changes they would make in their community.
   - The reasons these changes are important.
7. Each group then shares its three changes with the workshop together with the reasons why these changes are important or needed.

Variation

Have the workgroups brainstorm what they would change if they were President for a month.

Facilitator's tips

- Let the workgroups know how much time they have for their group brainstorms before they start, and give a "5 minute" warning so they can wrap up their ideas before presenting them to the larger group.
- This activity can be used as a lead-in to the village design exercise at the end of the Permaculture workshop.

Notes...

Notes...

WORKSHOP RESOURCES 2

Participant Handouts

Resources for Permaculture Workshops and Follow up - Participant Handouts

Notes...

About these handouts

These simple handouts have been designed to be easy to photocopy so that they can be duplicated and given to workshop participants or interested community members.

They can be used as "take-home" resources and references for related lessons or distributed in local communities for raising public awareness about the related issues.

Whenever appropriate, please encourage workshop participants to take this information home and share it with their families and other people in their community. This will help to increase awareness and therefore support for the ongoing application of Permaculture principles in their area.

More educational media and handouts are available for free downloading from the IDEP Foundation website: www.idepfoundation.org

Facilitators are also encouraged to make their own versions of handouts by:

- Copying relevant section of the Permaculture Reference Book.
- Downloading other information from the internet and creating handouts.
- Designing their own handouts that match the materials delivered and local needs.

Please send us your feedback and suggestions about these handouts and other handouts that would be useful for your trainings.

If you design any new handouts and would like to share them with other facilitators throughout Indonesia feel free to send copies to IDEP for ongoing consideration for publishing in later editions of these books.

Thank you and best wishes for your trainings and activities!

Please send your feedback, comments, and ideas to: info@idepfoundation.org

Notes...

What is Permaculture?

Permaculture is a design system that works towards harmonious integration of landscape and people to provide food, shelter, energy and other needs in a sustainable way. It takes into account food production, structures, technologies, energy, natural resources, landscape, animal systems, plant systems, and social and economic structures. It is applicable to urban and rural conditions and any scale of design. The 10 basic principles of Permaculture design are guidelines that you can apply to any project. They are demonstrated in the image below, can you find them?

Permaculture is about working with, rather than against, nature.

Permaculture is = PERMAnent AgriCULTURE + PERMAnent CULTURE

Permaculture draws upon traditional practices of earth stewardship integrated with appropriate modern technology. The term “Permaculture” was coined in the 70s by Bill Mollison and David Holmgren. Today, Permaculture work is being carried out in over 100 countries by many thousands of permaculture design course graduates.

Permaculture ethics are:
Earth care • People care • Fair share

This fact sheet was developed by IDEP Foundation
More information: www.idepfoundation.org

IDEP

Text by Morag Gamble of SEED International
Illustrations by Rappy and Zion

10 Principles of Permaculture

1. Diversity – Aims to integrate a variety of beneficial species of food, plants, and animals into design. This builds a stable interactive poly-cultural system which provides for human needs and also for the needs of other species.

2. Edge Effect – In general, there is more energy and more diversity of life on the edge where 2 types of natural systems overlap. On these borders one can access the resources of both sides. Using the edge effect, and other natural patterns that you observe, creates the best effect.

3. Energy Planning – Placing the elements of your design in such a way as to minimize the use of energy (including fossil fuels and human labor). Utilizing the energy and resources that you have, first on-site and then from outside the system, as effectively as possible. On-site energy resources include natural forces such as gravity, wind power, waterpower. This saves time, energy, and money.

4. Energy Cycling – In a natural system there is no waste or pollution. The output from one natural process becomes the resource for another. Recycle and reuse all of resources as many times as possible.

5. Scale – Creating "human-scale" systems. Choose simple, appropriate technologies for use in designs. Only create systems that are manageable. Start small and take achievable steps towards an ideal goal.

6. Biological Resources – Using natural methods and processes to achieve tasks. Find things in nature, like plants, animals, or microbes, that are supportive of the system design and minimize outside energy input.

7. Multiple Elements – Support each vital need and essential function in more than 1 way, so that a temporary failure in 1 element will not stop the functioning of others. Also, recognize that there is almost always more than 1 way to achieve any task.

8. Multiple Functions – Most things can be used in a variety of ways and for a variety of functions. One rule of thumb in Permaculture is to try to design 3 uses for every element of the system. This can save space, time, and complication in any particular project.

9. Natural Succession – Work with nature and the processes of natural systems. Anticipate future developments through research and observation when necessary.

10. Relative Location – Place every element of your design in relationship to others so that they benefit from each other. For example, store tools near where they will be used.

WHAT DO YOU KNOW ABOUT GARBAGE?

THE MOST IMPORTANT THING IS...

DON'T burn garbage

because the poisons that are in some garbage will be released into the atmosphere and into the air we breathe, which will make us all sick.

DON'T bury non-organic garbage

because chemicals from garbage can seep into the soil and waterways below the soil. This can cause health problems to living things in the area.

DON'T dump garbage

because chemicals from garbage can seep into the soil and waterways below the soil. This can cause health problems to living things in the area.

When you throw away plastic and things that are made from plastic (for example: plastic bags, candy wrappers, styrofoam, sponge packing materials, etc), it will take about 200-400 years for the plastics to decompose.

Burning plastic releases dangerous toxic waste into the atmosphere, and therefore into the air that we breathe. Breathing this pollution has serious negative effects on our health, including weakening our immune systems and can even cause lung cancer.

If you throw organic wastes away that are still contained inside plastic bags or plastic containers they will not be able to decompose. So make sure you take your organic wastes out of plastic containers before composting.

Protect the health of your family and friends by separating your garbage!

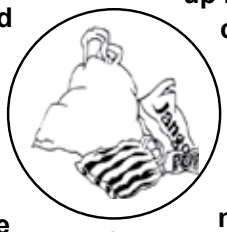
WHY? Because waste can still be used if it is separated into categories...

Organic Waste

Organic wastes (food scraps, leaves, etc) can be used to make compost, which is great food for your gardens and pot plants

Other Waste

Other types of waste (jars, cans, tires, bottles, etc) can be fixed and used in creative ways like these. If they can't, then do make sure they get picked up by local trash collectors for recycling.



Paper Waste

You can use paper wastes to make your own handmade recycled paper, or as decorating material. Always remember to use both sides of the paper you write on.

Plastic Waste

Plastics are dangerous to the natural environment and our health. They are difficult to recycle, so try to reduce your use of plastic as much as possible. When you shop use a cloth bag and don't accept plastics.

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Notes...

Taking Care of Waste

DO NOT...

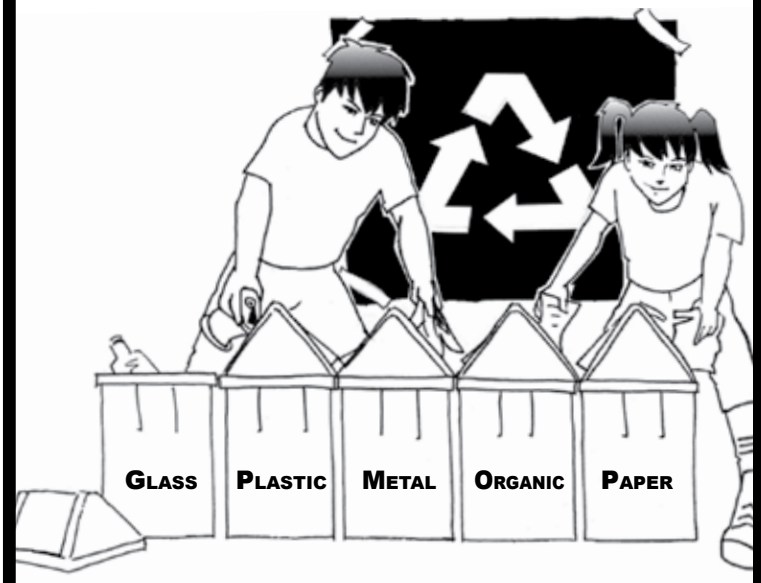
BURN GARBAGE
because the poisons that are in some garbage will be released into the atmosphere and into the air we breathe, which will make us all sick.

BURY NON-ORGANIC GARBAGE
because chemicals from garbage can seep into the soil and waterways below the soil. This can cause health problems to living things in the area.

DUMP GARBAGE
because chemicals from garbage can seep into the soil and waterways below the soil. This can cause health problems to living things in the area.

You don't want to make yourself or others sick. But what can you do with all your garbage? There are lots of ways to reduce and better manage your garbage.

GARBAGE CAN BE SEPARATED...



You will need some special bins to separate different types of garbage, like the drawing above.

Why should I separate my garbage?

ORGANIC WASTES
(food scraps, leaves, etc) can be used to make compost, which is great food for your gardens and pot plants.

PAPER WASTES
can be used to make hand made recycled paper, or as decorating material.

OTHER WASTES
(jars, cans, tires, bottles, etc) can be recycled into something useful, such as a flower vase or a pen holder.

REMEMBER!

PLASTIC WASTES

are dangerous to the natural environment and our health. They are difficult to recycle, so try to reduce your use of plastic as much as possible.

When you shop use a cloth bag and don't accept plastics.

We need to work together to reduce the negative impacts of waste....

If everyone understood the dangers of waste, and reduced and managed their waste better, there is a chance that our planet can stay healthy! Share this information with your friends and family about the dangers of waste and the impacts on our lives.

When you throw away plastic and things that are made from plastic (for example: plastic bags, candy wrappers, styrofoam, sponge packing materials, etc) it will take about 200-400 years for the plastics to decompose.

Burning plastic releases dangerous toxic waste into the atmosphere, and therefore into the air that we breathe. Breathing this pollution has serious negative effects on our health, including, weakening our immune systems and can even cause lung cancer.

If you throw organic wastes away that are still contained inside plastic bags or plastic containers they will not be able to decompose. So make sure you take your organic wastes out of plastic containers before composting.

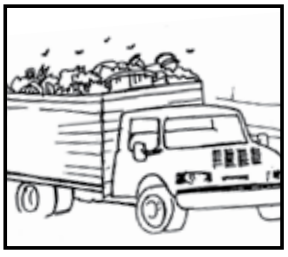
Let's do some garbage math...

In a small village...

1 family produces about 1 full plastic bag of garbage every day.

There are 2,000 families in this village. So, how many plastic bags of garbage does this village produce every day?

2,000 PLASTIC BAGS PER DAY



1 truck holds 200 plastic bags

1 regular garbage truck can hold 200 plastic bags of garbage. So, how many trucks of garbage does this village produce every day?

10 TRUCKS PER DAY

There are 365 days in a year. So, how many trucks of garbage does this village produce every year?

3,650 TRUKS PER YEAR

1 football field can hold 365 garbage trucks. So, how many football fields of garbage will this village produce in 5 years?

50 FOOTBALL FIELDS IN 5 YEARS

Start RECYCLING, REUSING, and REDUCING today!

IDEP

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HOW MUCH DO YOU CARE ABOUT...

PLASTIC is one type of garbage that is really dangerous for the environment. It is also very difficult to recycle, so try to reduce the use of plastic!

When you shop, bring a cloth bag and dont accept plastic bags.

Did you know that....

When you throw away plastic and things that are made of plastic (like plastic bags, candy wrappers, packing material, etc.) it will take 200-400 years for the plastics to decompose.

Burning plastic releases dangerous toxic waste into the atmosphere and therefore into the air that we breathe. Breathing this pollution can have serious negative effects on our health, including weakening our immune systems and lung cancer.

If you throw away organic waste that is still contained inside plastic bags of plastic containers, the organic waste will not be able to decompose. So make sure you take your organic wastes out of plastic containers before composting.

PLASTIC BAGS

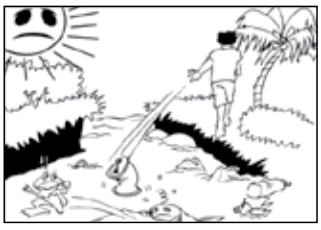
Just by saying this for one day of shopping, Budi managed to avoid collecting over 30 plastic bags!

REMEMBER

Don't burn garbage because the poisons that are in some garbage will be released into the atmosphere and into the air we breathe, which will make us all sick.

Don't bury non-organic garbage because chemicals from garbage can seep into the soil and waterways below the soil. This can cause health problems to living things in the area.

Don't dump garbage because chemicals from garbage can seep into the soil and waterways below the soil. This can cause health problems to living things in the area.



TAKE ACTION NOW FOR A BETTER FUTURE!

1. **Organize a clean up in your local community or school.**
2. **Learn more about recycling and how you can get involved.**
3. **Take your school on a field trip to the garbage dump and talk about what you see.**
4. **Tell your friends and family about the dangers of plastic for our health and our environment, encourage them to use cloth bags too.**

IDEP

This fact sheet was developed by IDEP Foundation

More information: www.idepfoundation.org

Notes...

HOW MUCH GARBAGE DO YOU SEE IN YOUR FUTURE?

In a small village, 1 family produces about 1 full plastic bag of garbage everyday.

There are 2,000 families in this village. So, how many plastic bags of garbage does this village produce everyday?

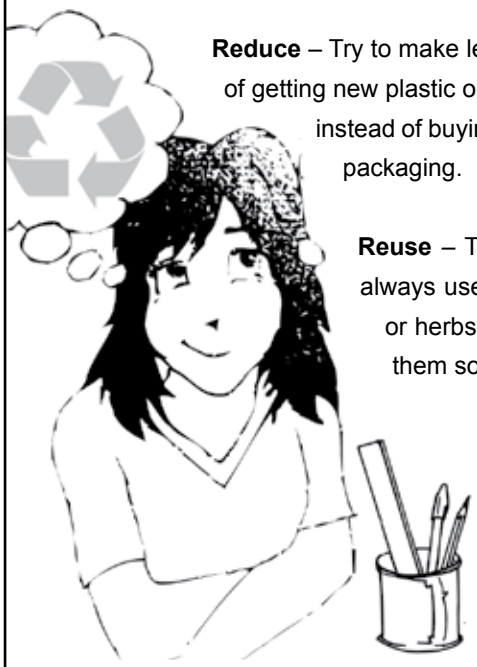
1 regular garbage truck can hold 200 plastic bags of garbage. So, how many trucks of garbage does this village produce everyday?

There are 365 days in a year. So, how many trucks of garbage does this village produce every year?

1 football field can hold 365 garbage trucks.

How many football fields of garbage will this village produce in 5 years?

Yikes, that's a lot of garbage! What can you do about this? If we work together and all do our part, we can create a future that is safe and clean for everyone.



Reduce – Try to make less garbage. You can do this by using cloth bags instead of getting new plastic ones when you go shopping. Refill your used aqua bottles instead of buying new ones. Avoid buying things that have a lot of plastic packaging.

Reuse – Try to use old things over and over again. For example, always use both sides of your paper, use old cans to plant flowers or herbs in, or tin cans as pencil holders, you can even decorate them so they look cool!

Recycle – Change something you were going to throw away into something new. For example, you can use waste paper to make new paper, compost your kitchen waste and use the compost in your garden to help the plants grow well.

REMEMBER

Don't burn garbage because the poisons that are in some garbage will be released into the atmosphere and into the air we breathe, which will make us all sick.

Don't bury non-organic garbage because chemicals from garbage can seep into the soil and waterways below the soil. This can cause health problems to living things in the area.

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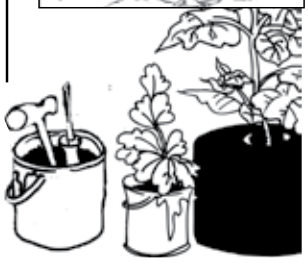

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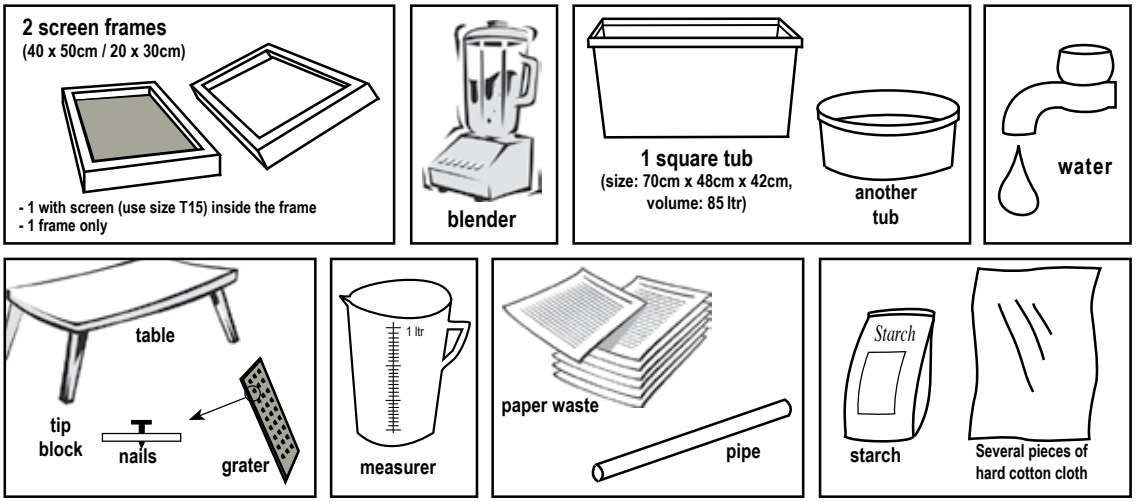
Notes...

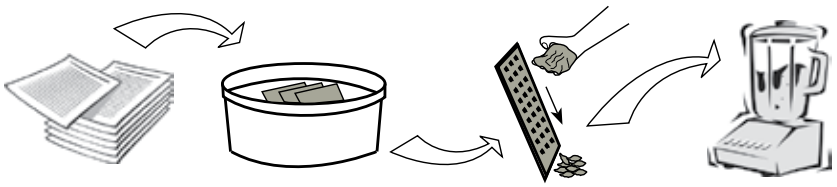
Let's Make Recycled Handmade Paper

The tools and materials that you will need to make your handmade paper:

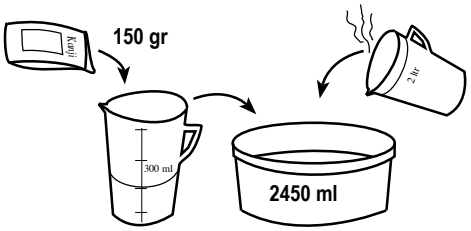


1. Put 1 kg of waste paper (white paper only) in a tub, add water, and soak for 12-24 hours.

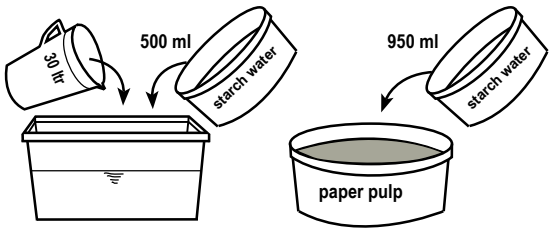
2. Grate all the paper, place one handful of grated paper in the blender and fill with water. Blend until it becomes a porridge like pulp. Place the paper pulp into the tub.



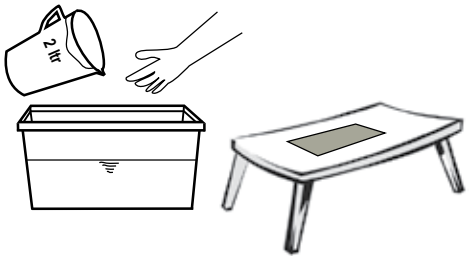
3. Boil 2 ltr of water. Add 150 gr of starch to 300 ml of water. Combine the starch mix and boiled (warm) water.



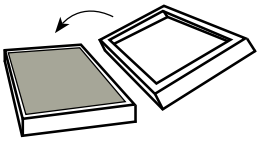
4. Pour 30 ltr of water into the square tub and add 500 ml of starch water. Combine the rest of the starch water (950 ml) with the paper pulp, then mix.



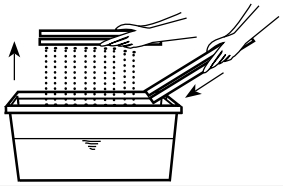
5. Pour 2 ltr of paper pulp into square tub and mix well. Place 1 sheet of hard cotton cloth on the table.



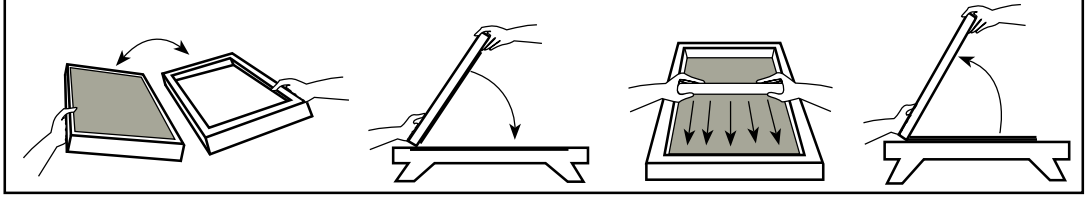
6. Assemble the 2 screen frames, like the picture below. The screen must be in the middle of the two frames.



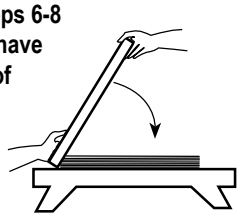
7. Place the screen in the square tub, then drain off as much water as you can.



8. Lift the frame without the screen, there will be a sheet of paper pulp on the screen below. Place the paper pulp onto the cloth, scrape the screen with the pipe (same width with as the screen) to remove excess water, then turn the screen over onto the cloth.

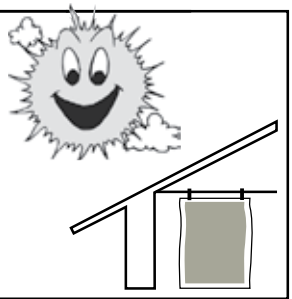


9. Place another piece of cloth on top and repeat steps 6-8 until you have 8 sheets of recycled paper.



10. To make more than 8 sheets of paper, pour 1 ltr of paper pulp into the square tub and repeat steps 6-10.

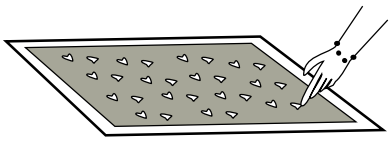
11. Pick up the cloth-paper layers one by one and hang them in a shady place for 6-8 hours. When they are half dry, place them in direct sun-light until completely dry.

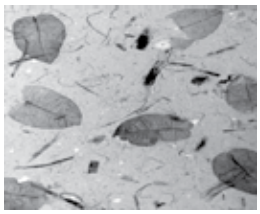


Smart Ideas

1. Applique technique

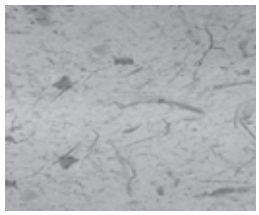
Place some small flowers, leaves, or grass onto a sheet of wet paper and cloth. Soak them for around 1-2 hours before applying. If they are quite thick, boil them for 1-2 hours before applying.





2. Mixing technique

While you are blending the pulp in the blender, throw in some natural materials that will add color or texture.



Here are some ideas of things you can make with your recycled handmade paper...

- **Paper for drawings and craft projects.**
- **Paper to wrap presents, books, or jars.**
- **Cards, invitations, envelopes, or folders.**
- **Pencil holders.**
- **Photo frames.**
- **Gift boxes.**
- **Lamp shades.**

Some natural materials you can use to give color to your paper...

If you want to make paper with special colors, try adding these liquids into the paper pulp. Some of these colors are very strong, so use rubber gloves for this project.

For natural coloring, use:

- Turmeric – when boiled and sieved it depletes YELLOW color.
- Teak wood leaf – when boiled and sieved it depletes RED color.
- Pandanus amaryllifolius leaf (*pandan wangi*) – when boiled and sieved it depletes GREEN color.
- Uncaria gambir (*gambir*) – when boiled and sieved it depletes BLACK color.
- Aglaia odorata lour (*pacar cina*) – when boiled and sieved it depletes PINK color.
- Indigofera tinctoria L (*nila*) – when boiled and sieved it depletes BLUE color.

IDEP

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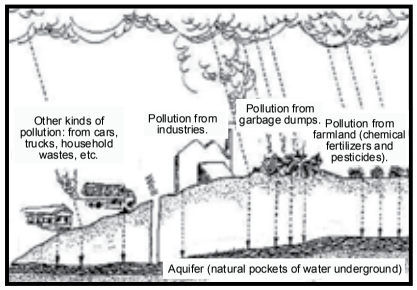
More information: www.idepfoundation.org

What do you know about water?

We use water every day for cooking, drinking, washing, growing food, and making almost everything we use.

Our bodies are made up of more than 80% water!

Clean fresh water (that isn't full of salt like sea water, or polluted like sewage water and waste water) is one of the most precious resources we have. Without fresh water we couldn't live on this planet. Unfortunately there are big problems with fresh water in our world today because of pollution from people and industries. Many of the places that supply us with fresh water (like forests, rivers, and lakes) are disappearing or becoming polluted.



How can we conserve fresh water?

Understand how precious fresh water is and...

- Stop polluting rivers and oceans.
- Don't leave taps on when you are not using them.
- Fix broken taps as soon as they start leaking.
- Collect, store, and use rain water.
- Reuse water as much as possible.

What is wastewater?

Wastewater is water that has been contaminated by chemicals, human waste, or animal waste. This includes water that comes from toilets (blackwater), and water that has been used for bathing or washing things (graywater).

What can blackwater do to our environment? It depends on how the blackwater is disposed of. If blackwater is stored in a septic tank that isn't sealed properly, it will seep into the ground and can contaminate well water and ground water. If blackwater is pumped into rivers or the ocean, it will eventually kill fish and other sea life, as well as causing human illness to those who come into contact with the water.

What can we do about our blackwater? Blackwater needs to be treated before it flows back into the environment. Wastewater Gardens® purifies blackwater so it can be safely returned to nature. Doing this will help conserve precious fresh water resources.

Today, Wastewater Gardens® are purifying and conserving water in many countries all over the world. You can see samples of some of these gardens on our website: www.idepfoundation.org

Wastewater Gardens® are a great way to clean water for reuse and to help conserve our fresh water resources!

A Wastewater Gardens® Fact Sheet

How to conserve & clean

Water with Wastewater Gardens®

www.idepfoundation.org

How do Wastewater Gardens® purify and conserve water?

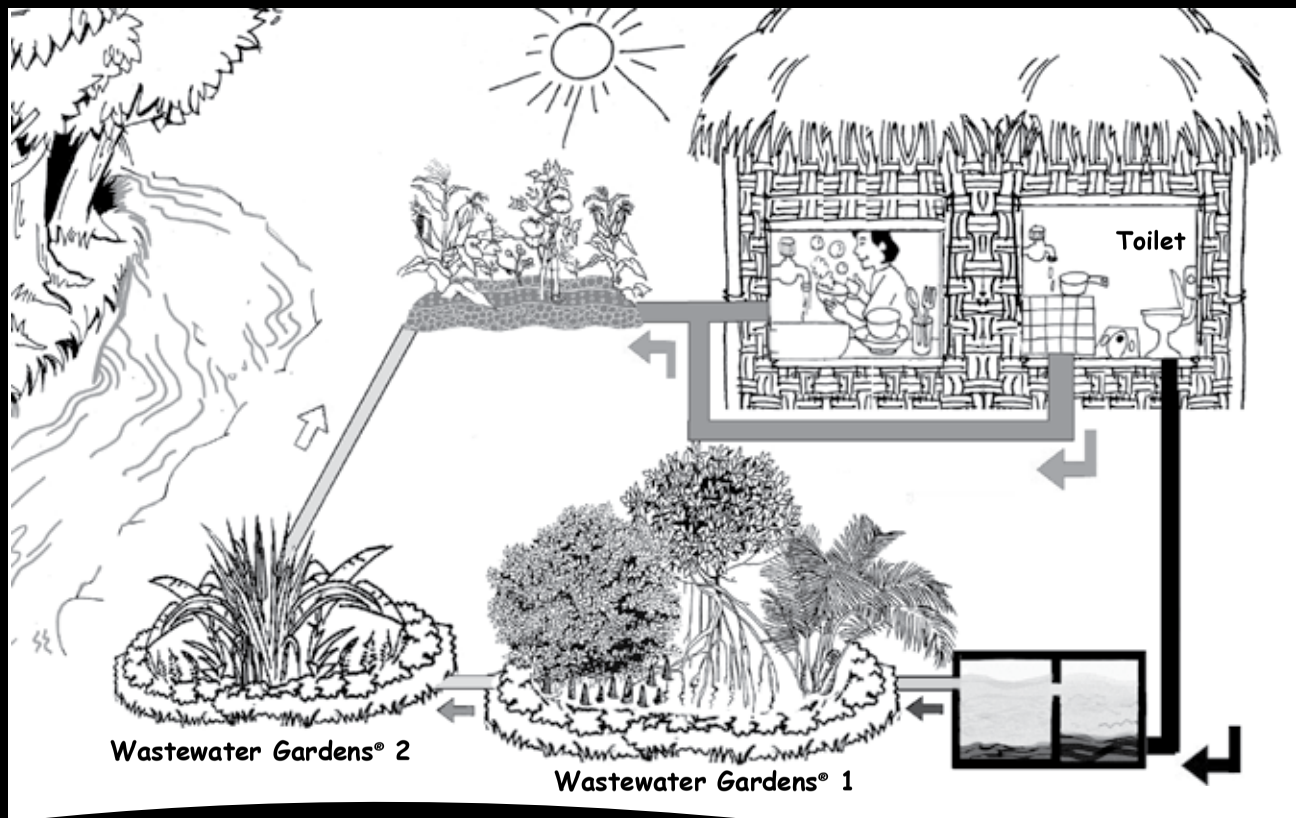
Normally wastewater from your toilets (called blackwater) goes to your septic tank, and disappears into the ground below you. This pollutes your well water and groundwater (the water that flows below the earth's surface). Using rivers or water channels as toilets can be very dangerous for yourself and other bathers, especially children, as there are many diseases and infections that you can catch from this.

In a Wastewater Gardens® system, blackwater flows through a sealed (water tight) septic tank into a water-tight, plant-filled living water treatment system. The plants use the rich nutrients in the blackwater to grow. At the same time, oxygen and microbes that are in the Wastewater Gardens® eliminate harmful bacteria, that could cause disease if untreated. In 5 days, the water that comes out of the Wastewater Gardens® is clean enough to water your gardens.

The wastewater from washing and cleaning (called graywater) can be piped straight from your sinks, drained through a bed of gravel, and stored underground so there is no risk of direct contact. It can then be used directly to irrigate your gardens.

In the system shown here, Wastewater Gardens® 1 uses mangrove trees and shrubs, which can be used for food, medicine and crafts.

Wastewater Gardens® 2 uses native wetland plants, water-tolerant fruit trees such as banana and papaya, and medicinal herbs.



Wastewater Gardens®

Eliminate the risk of diseases caused by contact with blackwater.

Are a low-cost, long-lasting, easy to maintain appropriate technology.

Don't have bad odors.

Mosquitoes don't breed in them.

Can be made any size; for homes, clinics, schools, hospitals, or communities.

Can use either fresh water, salt water, or a combination of both.

Conserve water in dry areas through reusing water for irrigation.

Are beautiful gardens that grow well even in very dry areas.

The plants grown in WWG's are often locally available and are productive and healthy.

To see pictures of Wastewater Gardens® all over the world, visit: www.idepfoundation.org

IDEP

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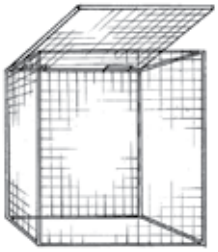
COMPOST CAGE

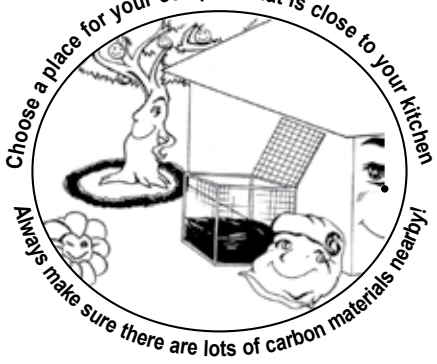
Materials needed...

Nitrogen material
- Food scraps
- Leaves

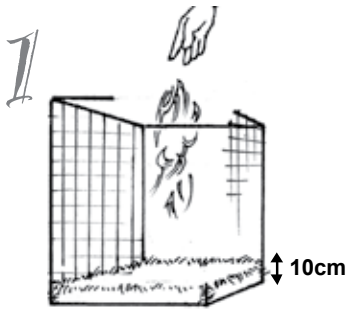


A closed container
such as the "compost cage" shown here

Carbon material
- Sawdust
- Rice husks
- Dry leaves

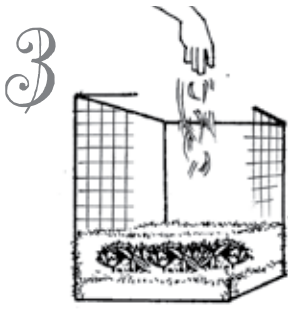


What you do...

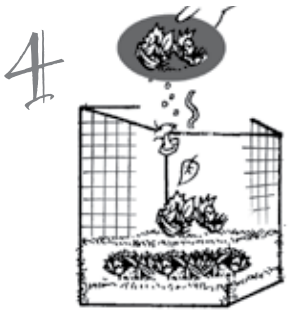


Line the base of your compost cage with about 10cm of carbon material.

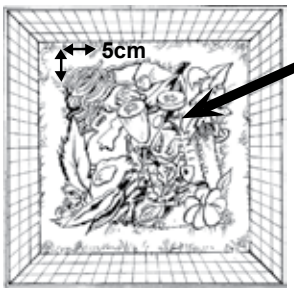
Throw some food scraps (nitrogen) on top – make sure they fall in the center.



Add more carbon material, enough to cover all the food scraps.



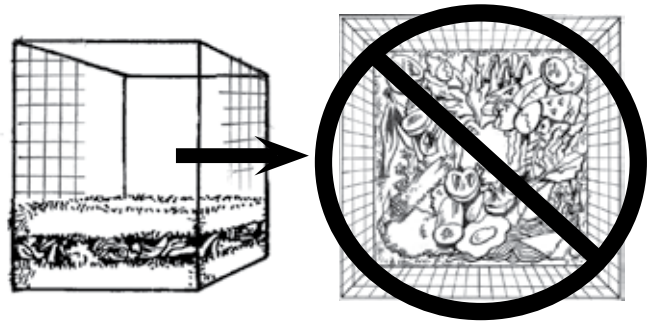
Repeat this process until the compost cage is full.



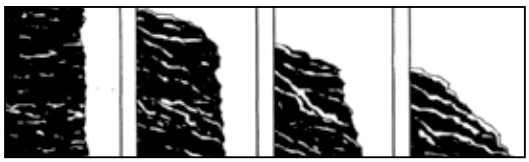
5cm from the edge

REMEMBER!

1. Make sure the food scraps don't fall on the edge of the cage – have a 5cm border of carbon materials all around the edges.
2. Keep your food scraps and carbon ratios even.

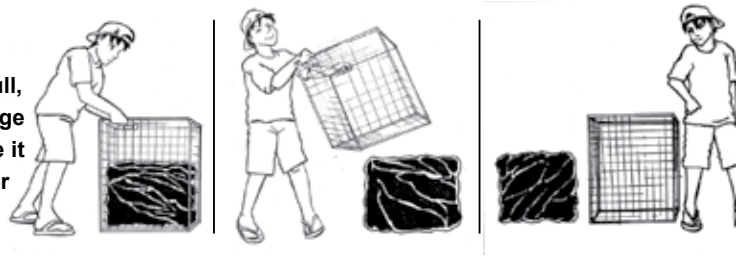


Don't let the compost touch the edge!



Over time the compost will settle and become smaller.

Once the compost cage is full, lift the cage and move it to another location.



The compost is ready to use when it is black and crumbly.

IDEP

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More information:
www.idepfoundation.org

Troubleshooting compost problems

The compost is only damp and warm in the middle of the pile

Probable cause
The compost pile is too small, or cold weather may have slowed down the composting process.

Suggested solution
If you are only composting in piles, make sure your pile is at least 1m high and 1m wide. With a composting cage or triangle composting system, the pile doesn't need to be as large.

Nothing is happening, the compost pile doesn't seem to be heating up at all

Probable cause

- Not enough nitrogen material.
- Not enough oxygen getting to compost.
- Not enough moisture in compost pile.
- The compost is done and ready to use.

Suggested solution

- Make sure you have enough nitrogen rich sources, like manure, grass clippings or food scraps.
- Mix up the pile so it can breathe, or switch to compost cage or triangle system.
- Mix up the pile and water it with the hose so that there is more moisture in the pile – a completely dry pile won't compost.

Leaves/clippings are not decomposing

Probable cause
Not enough aeration, and/or lack of moisture.

Suggested solution

- Avoid thick layers of only one type of material. Too much of one material, like leaves, paper or grass clippings, won't break down well.
- Break up the layers and mix up the pile so that there is a good mix of materials.
- Shred any large materials into small pieces to make sure they break down well.

The compost smells like rancid butter, vinegar or rotten eggs

Probable cause
Not enough oxygen, and/or the compost pile is too wet or compacted.

Suggested solution

- Mix up the pile so that it gets some aeration, or use a compost cage or triangle system.
- Add coarse dry materials like straw, hay or leaves to soak up excess moisture.
- If the smell is too bad, add dry materials on top and wait until it dries out before you mix the pile.

The compost smells like ammonia

Probable cause
Not enough carbon materials in the compost.

Suggested solution
Add more brown carbon materials, like sawdust, rice husks, leaves, straw, hay, shredded newspaper, etc.

The compost is attracting rodents, flies, or other animals

Probable cause
Inappropriate materials (meat, oil), or the food-like materials are too close to the surface or sides of the compost pile.

Suggested solution
Bury food scraps near the center of the pile. Don't add inappropriate materials (bones, meat) to your compost. Switch to a compost cage.

The compost is attracting insects, millipedes, and slugs

Probable cause
This is normal and part of the natural process.

The compost is attracting fire ants

Probable cause
The compost could be too dry, not hot enough, and/or has food scraps too close to the surface.

Suggested solution
Make sure your pile has a good mix of materials to heat up, and is kept moist enough.

IDEP

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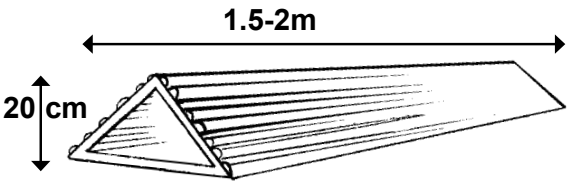
More information: www.idepfoundation.org

TRIANGLE COMPOST

This is a technique for making compost using an 'air tunnel' for extra oxygenation, which speeds up the composting process. To do this you will need a long triangular frame which you can make by yourself. The 'air tunnel' frame can be made from wood or bamboo of about 20cm tall and 1.5-2m long. Make two of these frames and keep them together.



Keys to good composting

1. The carbon/nitrogen ratio

A mixture of dry leaves, sawdust, or other sources of carbon combined with manure, green plants, or fertilizer for nitrogen (approximately 4:1 by volume).

2. The presence of microorganisms

A few shovels full of rich garden soil or compost will supply these.

3. The moisture level

The pile should have the moisture of a well-squeezed sponge. Add water as needed.

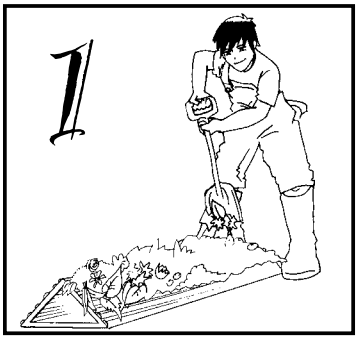
4. The oxygen level

A compost pile should be turned periodically to promote decay of its contents. Turning the pile adds oxygen, so the more you turn it, the faster it breaks down.

5. The particle size

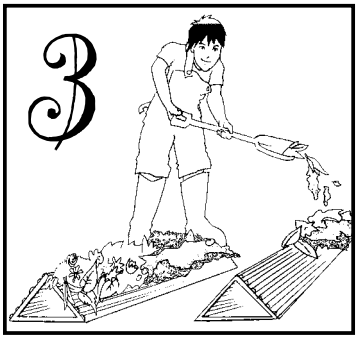
The finer the particle size, the more surface there is for microorganisms to work. Shredding leaves and larger materials generates compost faster.

Using compost = Healthy soil + Gardens

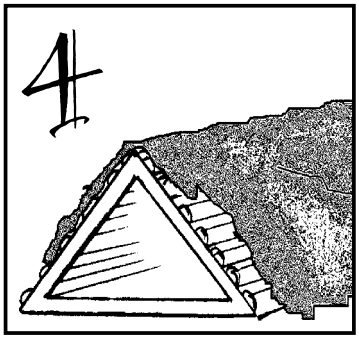


Place carbon and nitrogen materials on top of one of the triangle frames, leave the other one alone.

Each day, add more materials for composting and water the materials so that they stay damp.



Once the materials start to turn black (like soil), move them onto the other frame. Then, put more materials on the first frame again.



Keep the compost moisture level even by watering it regularly. It will take about 6 weeks for your compost to be ready, when it is all black.

Once your compost is ready, you can use it in your garden. Keep the compost making process going, so you always have stock.

The compost that you have made will help your garden, plants and soil to be more healthy and fertile.

Troubleshooting
compost problems

The compost is only damp and warm in the middle of the pile

Probable cause
The compost pile is too small, or cold weather may have slowed down the composting process.

Suggested solution
If you are only composting in piles, make sure your pile is at least 1m high and 1m wide. With a composting cage or triangle composting system, the pile doesn't need to be as large.

Nothing is happening, the compost pile doesn't seem to be heating up at all

Probable cause

- Not enough nitrogen material.
- Not enough oxygen getting to compost.
- Not enough moisture in compost pile.
- The compost is done and ready to use.

Suggested solution

- Make sure you have enough nitrogen rich sources, like manure, grass clippings or food scraps.
- Mix up the pile so it can breathe, or switch to compost cage or triangle system.
- Mix up the pile and water it with the hose so that there is more moisture in the pile – a completely dry pile won't compost.

Leaves/clippings are not decomposing

Probable cause
Not enough aeration, and/or lack of moisture.

Suggested solution

- Avoid thick layers of only one type of material. Too much of one material, like leaves, paper or grass clippings, won't break down well.
- Break up the layers and mix up the pile so that there is a good mix of materials.
- Shred any large materials into small pieces to make sure they break down well.

The compost smells like rancid butter, vinegar or rotten eggs

Probable cause
Not enough oxygen, and/or the compost pile is too wet or compacted.

Suggested solution

- Mix up the pile so that it gets some aeration, or use a compost cage or triangle system.
- Add coarse dry materials like straw, hay or leaves to soak up excess moisture.
- If the smell is too bad, add dry materials on top and wait until it dries out before you mix the pile.

The compost smells like ammonia

Probable cause
Not enough carbon materials in the compost.

Suggested solution
Add more brown carbon materials, like sawdust, rice husks, leaves, straw, hay, shredded newspaper, etc.

The compost is attracting rodents, flies, or other animals

Probable cause
Inappropriate materials (meat, oil), or the food-like materials are too close to the surface or sides of the compost pile.

Suggested solution
Bury food scraps near the center of the pile. Don't add inappropriate materials (bones, meat) to your compost. Switch to a compost cage.

The compost is attracting insects, millipedes, and slugs

Probable cause
This is normal and part of the natural process.

The compost is attracting fire ants

Probable cause
The compost could be too dry, not hot enough, and/or has food scraps too close to the surface.

Suggested solution
Make sure your pile has a good mix of materials to heat up, and is kept moist enough.

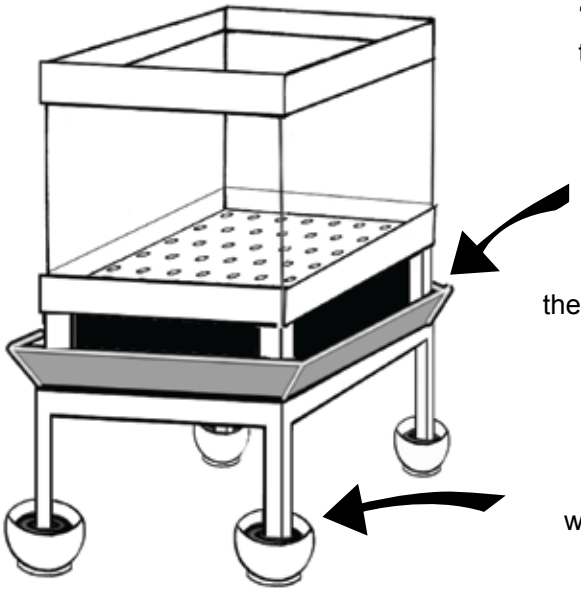
IDEP

This fact sheet was developed by IDEP Foundation

More information: www.idepfoundation.org

Making a Worm Farm

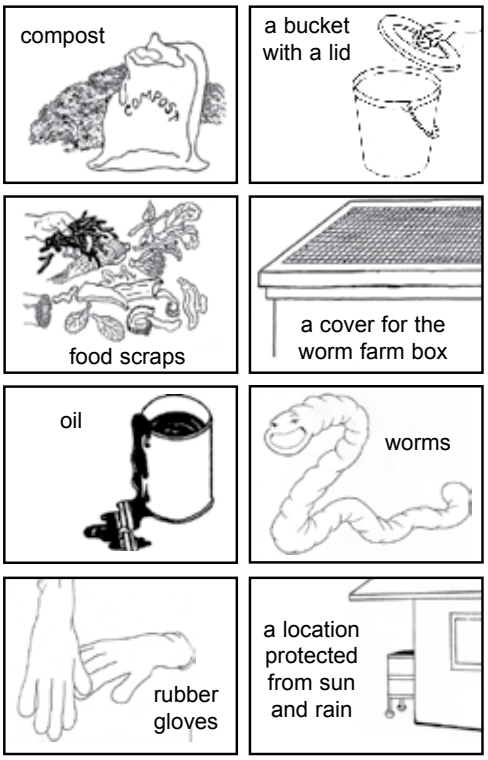
The box for your worm farm can be made from many materials, such as bamboo, plastic, or glass. Make the base of the box perforated so the worm juice can collect underneath.



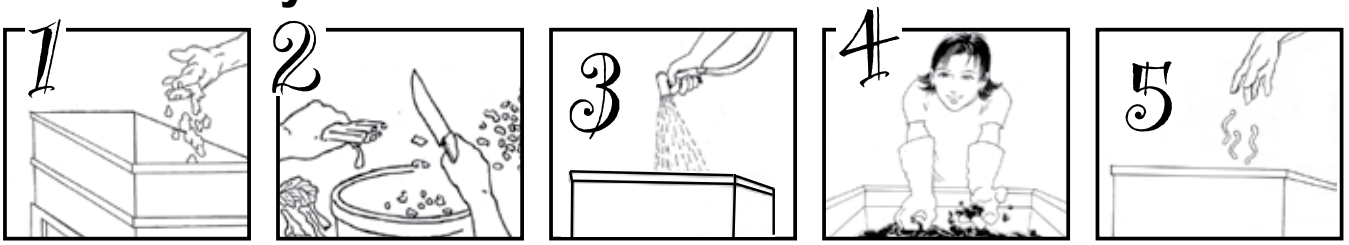
"Worm Juice" is liquid that the worms make. It is great plant food!

It can be easily collected in a tray placed below the main box. The wetter the worm food, the more worm juice you get.

Important!
Place the worm box legs in oil or soapy water so that ants cant climb into the box.

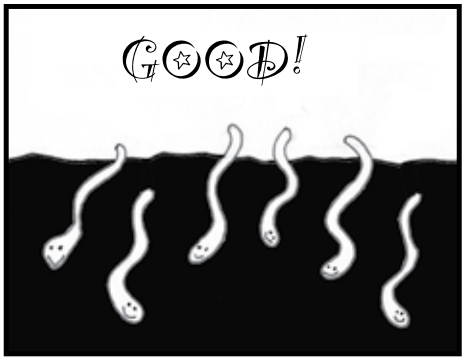


How to start your worm farm...

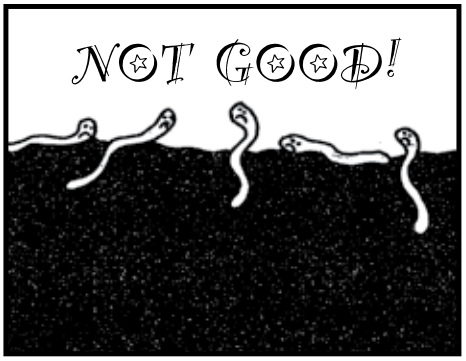


1. Put about 15cm of compost into the worm farm box.
2. Chop up vegetable food scraps and add them into the box.
3. Add a little water.
4. Mix everything together. Use gloves.
5. Gently add about 1kg of worms to the box.

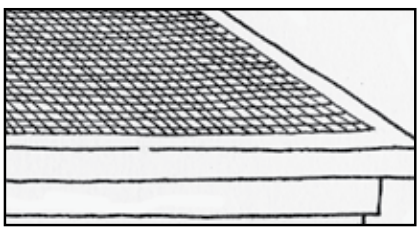
How to check if your worms like their new home...



If the worms go down inside the compost, they like it.



If the worms stay on top or return to the surface, there is something wrong with your compost mixture.



Close the lid firmly to keep out worm eaters. Lids can be made from chicken wire, rubber, plastic, tin, or wood.
Make sure it is ventilated, so the worms can breathe.

Taking care of your worm farm

Worms are really useful, they take food scraps and turn them into 'castings' and 'worm juice' which can be used as an excellent liquid fertilizer for your garden. Remember, worms need to be cared for, so pay close attention to them. Make sure you don't feed them anything that might make them sick.

Don't feed worms:

- Coffee or tea.
- Oil or oily foods.
- Essential oils or anything aromatic (with strong smells).
- Soaps or chemicals.
- Bones or meat.
- Citrus or other acidic fruits.
- Not too much salt or sugar.

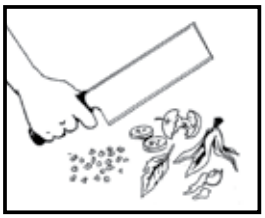
How much do worms eat?

About the same amount of food as their own weight.

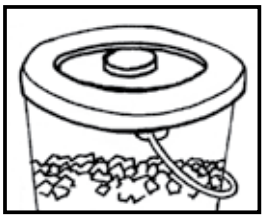
1kg of worms needs about 1kg of food.

Feed your worms at least once every 3 days.

How to feed your worms...

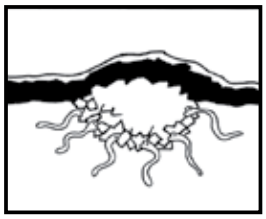


Chop food scraps into small pieces (see list above for foods to avoid).



Store them in a bucket for 2-3 days, until they are fermented.

Make a hole in the worm farm compost mixture, and add the food scraps.



Carefully cover the scraps with compost (do not use sharp tools to do this).

Note: Banana stumps chopped into small pieces also makes great worm food.

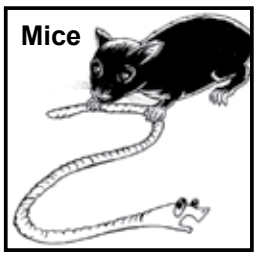
Things you should always check...

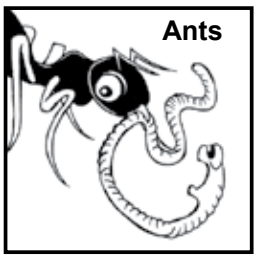
Moisture levels!

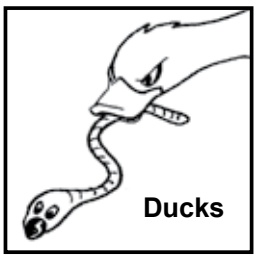
If the compost looks too wet, add and turn compost. Don't let it become compacted or water logged.

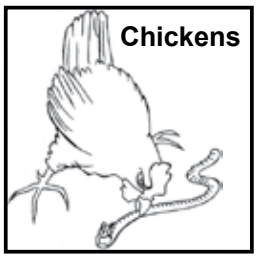
If the compost looks too dry, add food scraps with more water content.

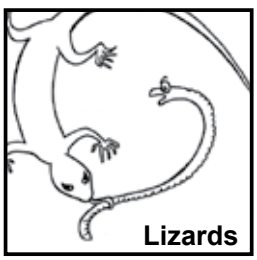
Worm eaters!

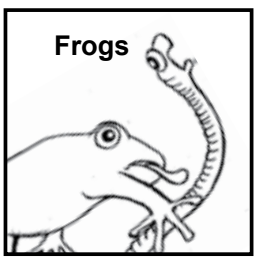












IDEP

This fact sheet was developed by IDEP Foundation

More information: www.idepfoundation.org

Would you like to grow the healthiest, most nutritious varieties of seeds while saving and making money?

For thousands of years farmers have collected and produced their own seeds.

While providing food for their families, gardeners save seeds from the healthiest and tastiest plant varieties.

Working together with the natural processes of the forest, seed savers around the world have created a vast and diverse catalogue of useful and nutritious plant varieties.

These days large businesses produce seeds to make a profit on the world market.

These businesses have engineered new, chemically dependant seeds by hybridizing and genetic engineering. Worldwide, local varieties of food crops are disappearing as they are replaced by "engineered" varieties. In the last century, ¾ of all garden varieties have disappeared.

While small farms go bankrupt, these companies are making huge profit in a business which once belonged to the small farmer. Why not reclaim it?

Protect your community's inheritance. Grow and save your local plant varieties!

Many people around the world recognize the need to conserve local and heirloom plant varieties. Start a seed bank and join the worldwide network of seed savers today!

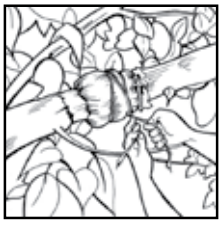
Four methods for propagating tropical plants:

1. Wet Seeds
(like tomatoes)

2. Dry Seeds
(like rice)

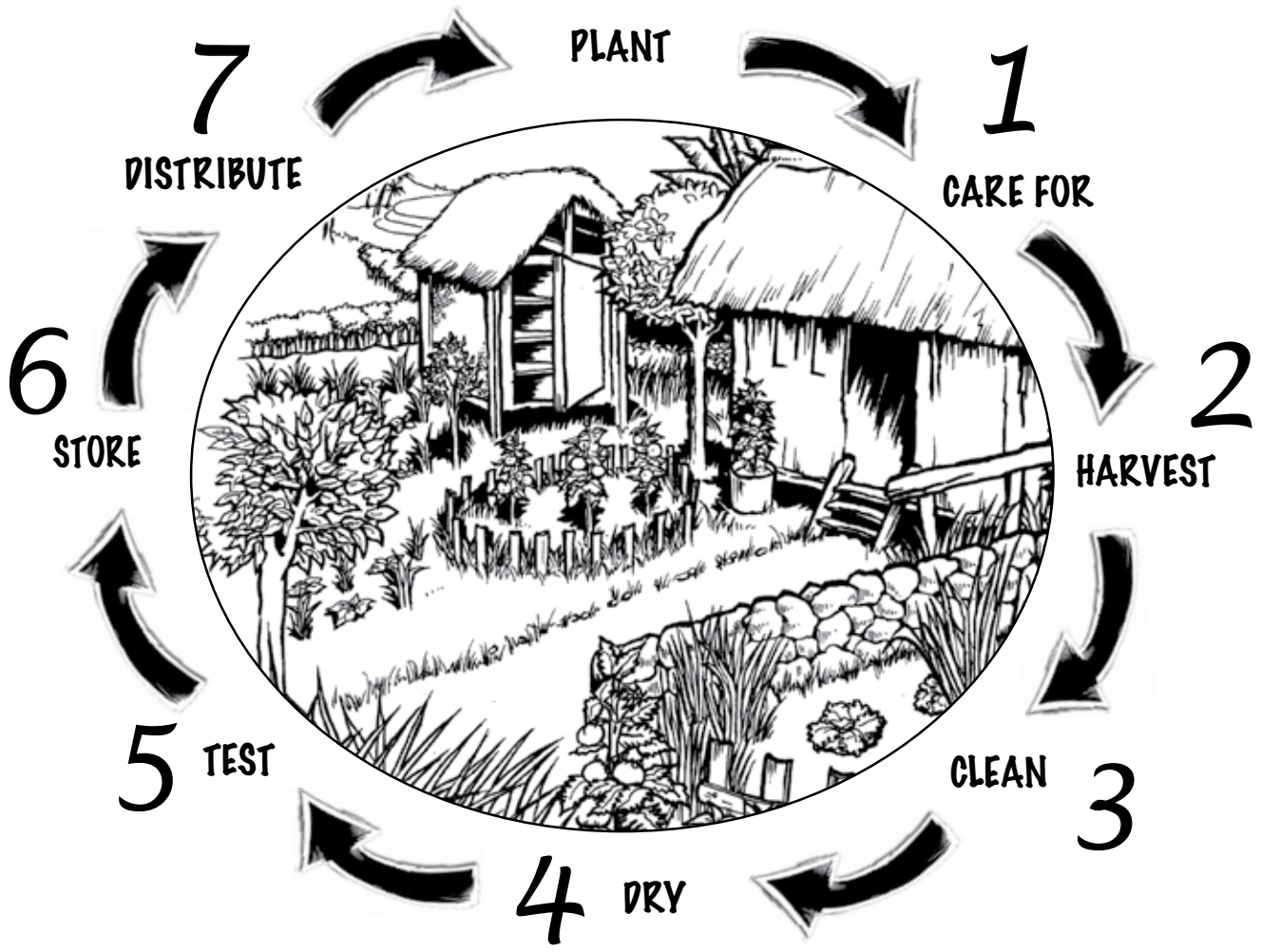
3. Grafting
(like mangoes)

4. Root Cuttings
(like cassava)



The Seed Saving Cycle

Seed saving is a continuous cycle of activities which follows the natural cycle of plants. When learning seed saving, nature is the best teacher.

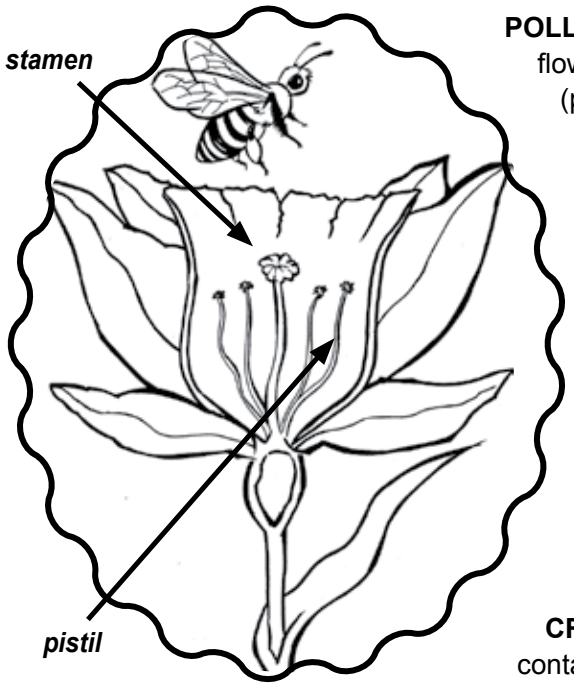


There are a few basic tools you will need for seed saving, such as:

- A cool dry room
- Water source
- Buckets or tightly woven baskets
- Cloth or paper for drying
- Air-tight containers
- Desiccant (silica gel or wood ash)
- Sieves or screens for winnowing
- Notebook and pens for record keeping
- Labels (bamboo or re-used plastic)
- Weather-proof markers for labels

Flower Structure & Pollination

Understanding how plants reproduce...



POLLINATION HAPPENS WHEN pollen from the male parts of the flower (stamen) comes into contact with female parts of the flower (pistil). Once a flower is pollinated, it begins to create seed. Depending on the type of plant, pollination can happen in several ways:

SELF POLLINATION – Most vegetable flowers have both male and female parts on the same flower. These species can pollinate themselves.

INSECT POLLINATION – Some varieties such as squash, need insects or birds to carry pollen from one flower to the next.

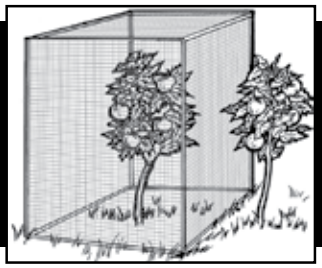
WIND POLLINATION – Some species such as corn, allow the wind to spread their pollen to other flowers.

CROSS POLLINATION – When pollen from one plant comes into contact with the pistil of another.

Dioecious plants such as asparagus, have male and female parts on different plants.
Monoecious plants such as corn, have male and female parts on the same plant, not on the same flower.
Perfect flowers have both male and female parts and are capable of self-pollination.

1 Caring for Plants

In order to conserve a particular variety of plant, it is important to isolate flowers to protect them from cross-pollination by other varieties. There are several ways to do this, for example, plant different varieties far enough away from each other so that pollen cannot travel from 1 to the other. The distance needed will depend on how that variety of plant pollen travels and any blockades that it might encounter.



CAGING

Plants that are pollinated by insects can be caged on alternative days to allow insects access to 1 variety at a time.

BAGGING

Flowers of self-pollinated plants can be covered with a paper bag or gauze to discourage insects and floating pollen.

BLOCKADES

Place rows of tall, dense plants in between 2 species to block the movement of pollen between them.

HAND POLLINATION

Cut the stamen of the male flower and rub it against the stigma of the female flower.

❷ Harvesting & ❸ Cleaning Seeds

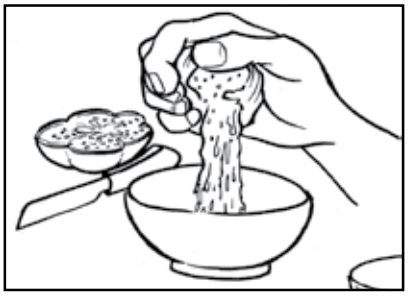
Collect only the best seeds from the best plants!

Roguing – is the process of removing plants with undesirable characteristics before they pollinate other plants and spread these characteristics. This should be done often to ensure good seed crops.

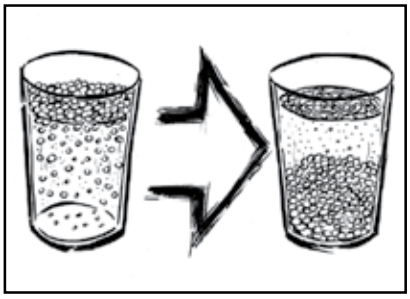
Mid-morning is the best time for seed collecting.

For wet seeds:

Pick fruits when they are soft and fully ripe (past eating stage).

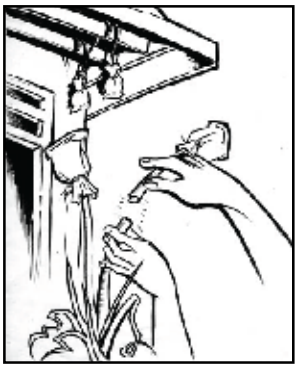


Scoop seeds out of the fruit and onto a screen. Run water over them to clean them.

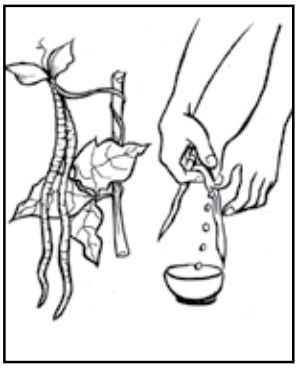


Soak in water for 24 hours, until fermented.

For dry seeds:



For small seeds such as onions, bag the whole seed cluster and break it off at the stem. Then hang under a roof to dry. Seeds are already bagged for storage. Remember to protect against critters.



Hand pick large seeds such as beans.

4 Drying & 5 Testing Seeds

Drying - Spread seeds out on dry cloth or paper. Air dry in the shade for 1 day, then move to bright sunlight. Covering seeds with winnowing screens can help guard against wind and pests. Plants like onions can be hung to dry in paper bags under a roof.

Big seeds like beans and corn take 1-2 weeks to dry. To test, bite into 1. If your teeth leave an indent it is not dry yet.

Medium seeds like pumpkin and chili take about 1 week to dry. Dry seeds will snap when bent.

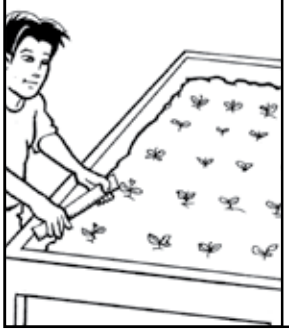
Small seeds like eggplant and lettuce take 2-3 days to dry.

Dry seeds must be carefully stored. Moisture will shorten the life span of your seeds drastically.

Note: Some tropical seeds cannot be dried and must be planted right away!

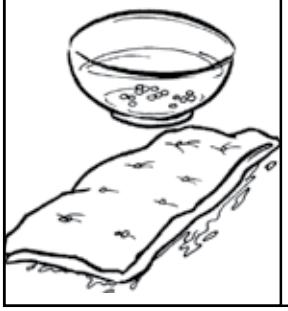
Germination testing	Test 1 seed for every 10 harvested, but no more than 500 seeds. Record the number of seeds that germinate and divide by the number that were tested to get a germination percentage (75/100 = 0.75 = 75%). Label well.

Nursery testing (for small seeds)



- Use compost as a medium.
- Soil can be mixed with the compost, but it must first be sterilized by boiling it in water.
- Water lightly to begin with, but keep constantly moist.

Bowl testing (for large seeds)



- Soak in water overnight.
- Fold seeds in paper and sprinkle with water until damp.
- Maintain moisture daily.

6 Storing Seeds

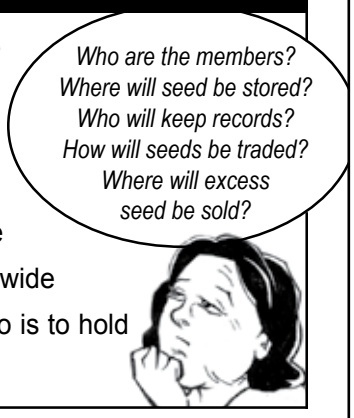
Tropical climates cause seeds to rot quickly, but if stored well they can last 2–10 years.

- Wrap seeds in paper packets.
- Place in an air tight container.
- Add a 2cm layer of wood ash at the bottom of the container to soak up excess moisture.
- Add neem powder to discourage pests.
- Label everything clearly.

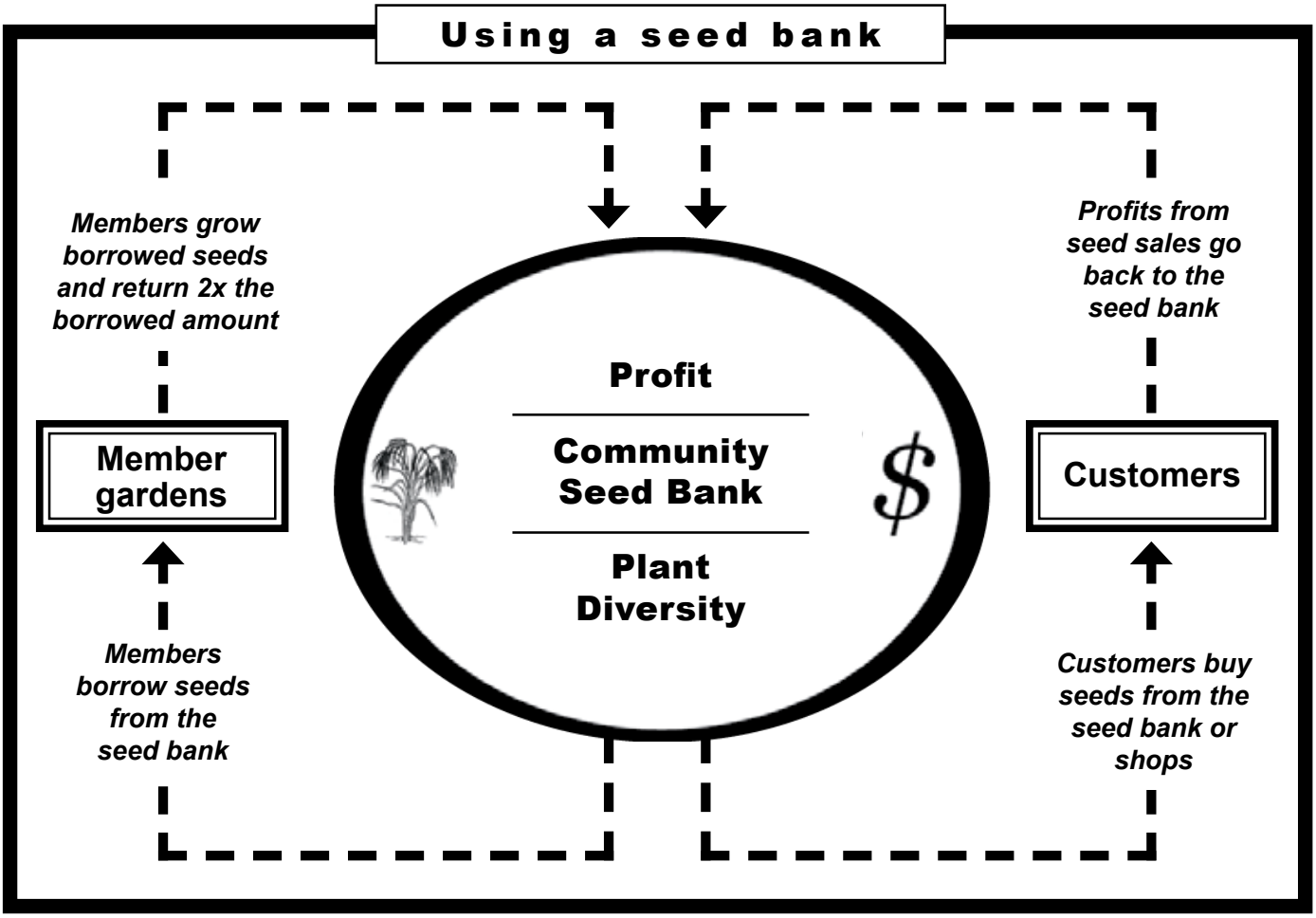
7 Distributing Seeds

Community seed banks...

The more seed varieties you have in your seed bank the better! Working together with friends and neighbors is a good way share the workload and the increased profits! Community seed banks connect and organize knowledge, resources and skills of local farmers. Once your seed bank is started, you can even connect to nationwide and worldwide seed saving networks! The first thing to do is to hold a meeting and make a few decisions...



Using a seed bank



For a successful seed bank, you need to keep accurate records!

NAME	VARIETY	USES	TIME TO HARVEST	TIME IN NURSERY	DISEASE RESISTANCE	RATE OF GERMINATION	AMOUNT OF SEED	
							STORED	DISTRIBUTED
Spinach	Local	Vegetable	4 weeks	Directly	Grasshoppers	2,700 / 3,000	500	2,200
Papaya	Sunrise Solo	Fruit, medicinal	1 year	3 weeks	Fungi	850 / 1,000	700	150
Papaya	Sunset Solo	Fruit, medicinal	10 months	3 weeks	Fungi	770 / 1,000	170	600
Cucumber	Local	Vegetable	2 months	Directly	Leaf spots	1,200 / 1,500	1,000	200

Seed Saving Checklist

Page no :

Name of Seed / Plant	Step	Seeds Received			Drying	Tested in nursery			Planted again for propogating					Notes
		From where	date	qty	time	qty	time	% grows	location	qty	date	qty grows	% grows	
Local name	A													
	B													
Variety	C													
	D													
Family	E													
	F													
Local name	A													
	B													
Variety	C													
	D													
Family	E													
	F													
Local name	A													
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Family	E													
	F													
Local name	A													
	B													
Variety	C													
	D													
Family	E													
	F													

Notes...

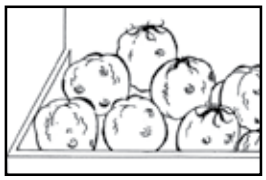
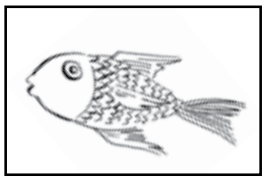
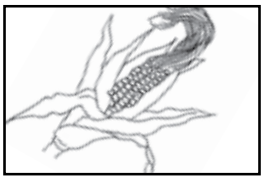
What are GMOs?

A genetically modified organism (GMO) is an organism whose genetic material has been altered using biotechnology or genetic engineering (GE) techniques.

Biotechnology uses plants, animals, or microbes, either wholly or in part, to create or modify a product or change an existing species.

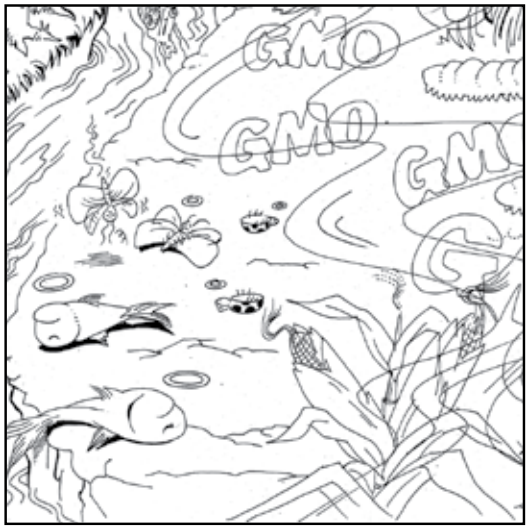
Genetic engineering (GE) is a modern biotechnological process in which the traits or characteristics of an organism are changed by transferring individual genes from one species to another or modifying genes within a species. Other terms for this process are genetically modified (GM), genetically modified organism (GMO), or transgenic.

GMO products include medicines (diagnostic tools and drugs, such as insulin), plants (insect, disease, and herbicide resistant plants), enzymes for food production (cheese), fuels and solvents (ethanol).

before GMO	the GMO process			the results
 *Tomatoes are unable to withstand refrigeration without becoming bruised and difficult to sell.*	 *So tomatoes were genetically modified with genes taken from...*	+  *A special breed of arctic fish (a species of fish that live in very cold arctic waters) and a virus*	=	 *The new GMO tomatoes could withstand the cool temperatures much longer.*
 *Corn crops were constantly being attacked by insects (pests).*	 *So some breeds of corn were genetically modified with genes from...*	+  *A special kind of bacteria that kills specific pests when they eat it, and a virus*	=	 *The new GMO corn directly emits its own pesticide into the environment.*
 *Soy crops threatened by various types of weeds were damaged by herbicides.*	 *So soy was genetically modified with genes that were taken from...*	+  *A special kind of bacteria that makes it resistant to specific herbicides, and a virus*	=	 *The new GMO soy crops could now be sprayed with these special herbicides.*

The basic principles of how GMOs are made:
GMOs are made by using molecular biology techniques that permit scientists to identify specific genes, make copies of them, and introduce the gene copies into recipient organisms by using a tool (the most common is a soil bacteria called Agrobacterium) that inserts genes into plants. When the recipient plant's cells divide, the new DNA from the other organism (carried by the Agrobacterium) is copied and passed on to the new cells. These new genes can affect what the plant's offspring can do and even how they look. There are also some other methods used, such as using the "Gene Gun" or the bombardment method.

Let's look at GMO and the possible risks



GMO and agriculture

- Lower yields
- Higher input costs
- Increased use of agrochemicals
- Patent contracts
- Loss of local varieties
- Promotion of unsustainable monoculture crops
- Loss of Bt (Bacillus thuringiensis) sprays for organic farmers
- Not enough land to prevent pest resistance

GMO and the environment

- Genetic pollution
- Negative effects on soil ecology
- Super weeds
- Super pests
- New and more dangerous plant viruses
- Impact on nontarget insects and animals
- Loss of Biodiversity
- Negative effects on forest ecology

?

GMO and consumers

- Toxins and poisons
- Increased cancer risks
- Food allergies
- Damage to food quality and nutrition
- Antibiotic resistance
- Increased pesticide residues

GMO and the economy

- Considered potentially unsafe, some countries are regulating and refusing GMO products, therefore closing down potential export markets for GMO
- GMO-free products could get a better price on international markets
- GMO companies are monopolising the food production system
- Changing the international market for edible oil products

Source: Agriculture Biotechnology, The GMO Debate College of Agriculture & Life Science, Cornell University. www.purefood.org

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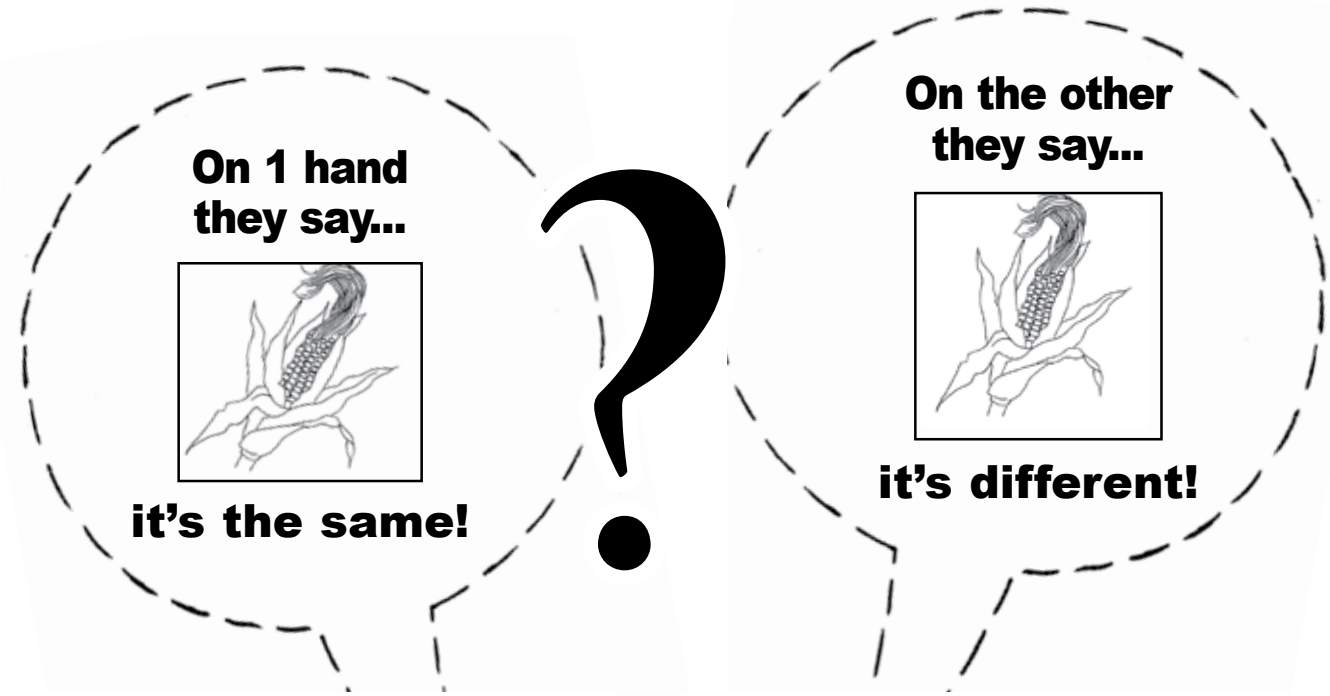
Two sides of GMO

GMO crops are both the same and different.
They can't be both. So, what's the real truth?

The contradiction arises depending on the situation and who the multinational GMO seed producing companies are talking to at the time. They want GMO crops (and therefore their food products) to be both the same and different for their own financial advantage.



When talking to regulatory agencies, GMO seed companies say that it is "substantially equivalent" which means it's the same. GMO Corn looks, grows and tastes like a corn plant so it must be treated the same as if it was a corn plant.

When talking to patenting authorities, the companies say that it is "novel" and therefore different and eligible to be patented. The company then can charge farmers more for its GMO seed because other companies can not produce the same type of seed in the same way.

How profit driven corporations increase their profits with both of these stances...

By sometimes saying that GMO is the same (substantially equivalent) they make money:

By not having to test the health and safety for humans and the environment to the same degree they would if they developed a new product, they save a significant amount of money. By having this status they can market their products faster and have longer to sell the seeds while still under patent because they don't "waste" time to have it properly tested.

By sometimes saying GMO is different (novel) they make money:

By selling their seeds at higher prices than other seeds on the market because GMO seeds have "special" (different) properties. Product patents allow companies to have a monopoly (exclusive rights) on the type of seed they have patented for a 20 year period, including its development time.

The problem with having these 2 stances is...

A handful of GMO companies can make huge profits while the general public and farmers lose in this process. As the seeds aren't properly tested (only a fraction of the time that pesticides are tested) consumers can't be sure that what they are eating is safe. Farmers lose by having to pay higher prices for these patented seeds that have not undergone sufficient environmental testing, which could cause damage in the long term to the environment the farmers live and farm in.

By owning the patents these corporations can...

Control global agriculture systems, charge higher prices for their seed, control who the harvest is sold to, and increase their sales by selling package deals to farmers including seed, fertilizers, and pesticides. They can even sue you if their patented seed genes unknowingly contaminate your crop!

Source: Sylvie Pouteau. Beyond Substantial Equivalence: Ethical Equivalence. Journal of Agricultural & Environmental Ethics 13: 273-291. Kluwer Academic Publishers. 2000. www.wkap.nl/oasis.htm/274804

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Who is profiting from GMO?

GMO (Genetically Modified Organism) crops are plants grown from seeds that have been genetically altered by foreign multinational companies. These companies are promoting GMO seed by saying that they produce better quality and higher quantity of produce, can resist herbicides, insect pests, and viruses, or have some other beneficial aspect for farmers or consumers who use them. If this was true you can see how we could become dependant on these seeds and therefore the food they produce.

The problem is GMO seed and products have numerous potential side effects and until now these products have not been sufficiently tested for human health or environmental effects before being commercially available. The companies that are producing the GMO seeds are the same companies that profited greatly from the Green Revolution, by causing farmers around the world to become dependant on their products. The ironic thing is they are using the same slogans of food security and farmer profits to sell these seeds as they did for their agrochemicals 35 years ago that were proved untrue.

For these companies this is business and the sales and the profits they make from these seeds and the agrochemicals are large (see below for more details).

The top 6 agrochemical companys' sales in 2000

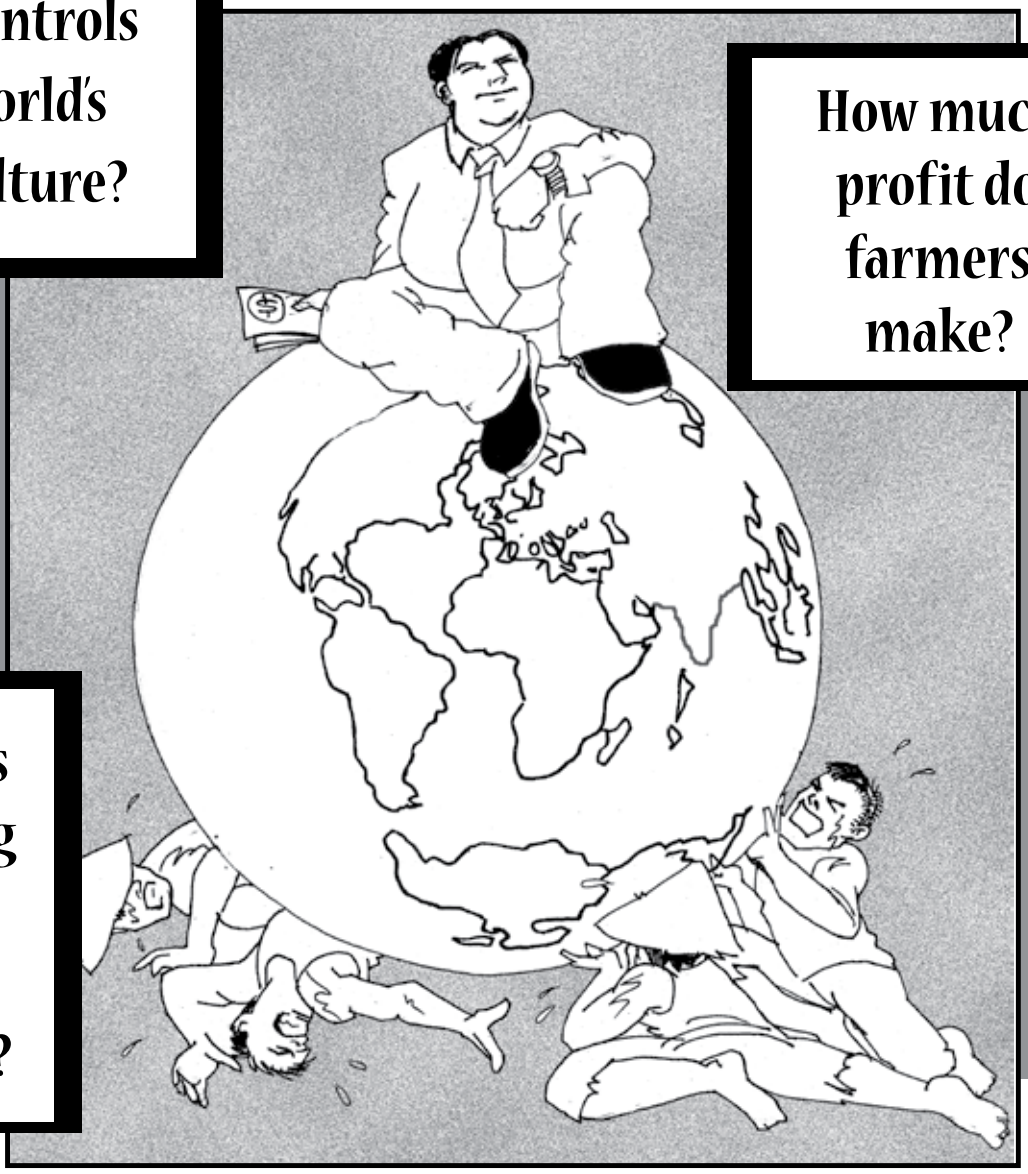
	Agrochemicals	GMO
No 1 - Syngenta	$ 5,888,000,000	$ 958,000,000
No 2 - Monsanto	$ 3,605,000,000	$ 1,608,000,000
No 3 - DuPont	$ 2,027,000,000	$ 1,838,000,000
No 4 - Aventis	$ 3,480,000,000	$ 247,000,000
No 5 - B.A.S.F.	$ 3,336,000,000	
No 6 - Dow Chemical	$ 2,086,000,000	$ 185,000,000

Do you want a genetically modified future?

Other questions worth considering

Who controls the world's agriculture?

How much profit do farmers make?



Who is getting the most profit?

Market forecasts...

Insecticide sales expected to increase 0.6% per year

Fungicide sales expected to increase 1% per year

GMO sales expected to increase 13.8% per year

Source: www.soyatech.com/bluebook/news/viewarticle.ldml?article=20010920-6

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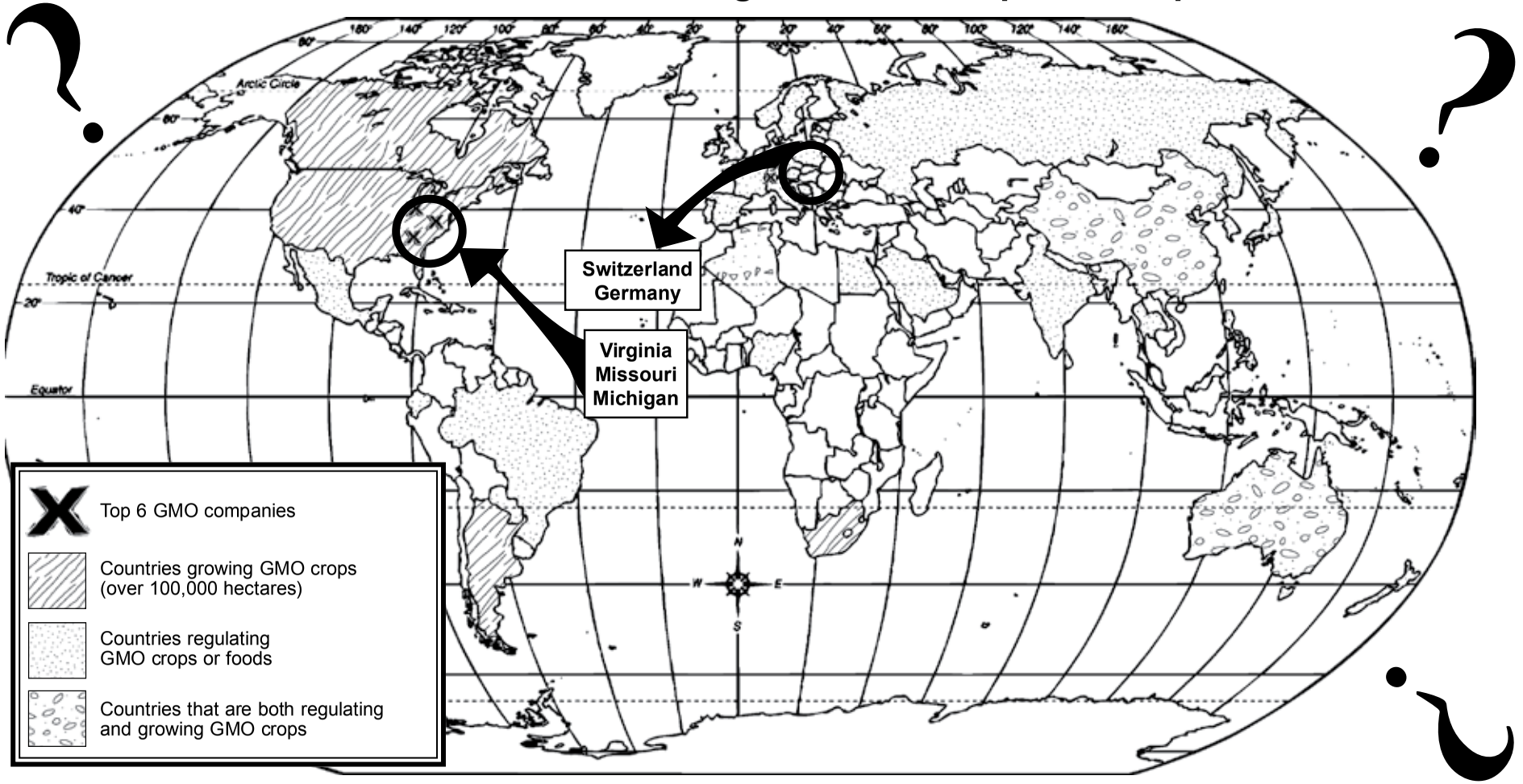
GMO in our world today

Why are the head offices of some GMO companies located in the same countries that are restricting GMO consumption and production?



Do you want a genetically modified future? Does our globe?

The impacts of global GMO distribution

Where are GMOs produced?

Monsanto – USA (Missouri)

Syngenta – Basel, Switzerland

Bayer – Leverkusen, Germany

BASF – Ludwigshafen, Germany

DuPont – USA (Virginia)

Dow Chemical – USA (Michigan)

Where are GMOs grown?

Countries producing over 100,000 ha	in 1999 (mha)	in 2000 (mha)
USA	28.7	30.3
Argentina	6.7	10.0
Canada	4.0	3.0
China	0.3	0.5
South Africa	0.1	0.2
Australia	0.1	0.2

These statistics are changing constantly.

As the GMO industry grows, imbalances within our agricultural industry and the global economy are increasing.

Countries regulating GMO

Africa: Aljazair, Egypt, Nigeria

Asia: Sri Lanka, Thailand, China, Japan, Philippines, India, Taiwan, South Korea, China

Europe: Norway, Austria, Germany, the United Kingdom, Spain, Itali, Greece, France, Luxembourg, Portugal, Russia, Poland, Bosnia, Switzerland, Norway, Sweden, the Czech Republic, Latvia

Latin America: Brazil, Paraguay, Ecuador

The Middle East: Saudi Arabia, Israel

North America: Mexico

The Pacific: Australia, New Zealand, Pacific island countries (14)

What will Indonesia do?

Sources: http://www.greenpeaceusa.org/ge/, http://www.twnside.org.sg, http://www.isaaa.org/kc/ http://www.soyatech.com/bluebook/news/viewarticle.ldml?article=20010920-6

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Beware of GMO in Indonesia!

GMO Research in Indonesia

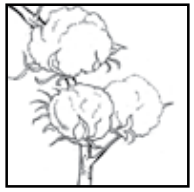
There are already many GMO crops being field tested and researched in Indonesia. Most of the research and trials are being undertaken without the general public knowing. Even people close to the trial site who could be affected are not aware that these trials are taking place.

The reason these crop trials are of concern is that there is the potential for Genetic Contamination from GMO crops to FARMERS' CROPS, with GMO genes modified with bacteria or viruses depending on the type of GMO trial that is taking place.

Some GMO crops

currently being field tested

POTATO
Insect resistant.
Balitan, Balai, USA.



COTTON
Insect or herbicide resistant. **Monsanto.**

PEANUT
Virus resistant.
Balitbio, ACIAR.

CORN
Insect or herbicide resistant. **Monsanto, Pioneer Balitbio, ABSP.**

SOYBEAN
Herbicide resistant.
Monsanto

RICE
Insect resistant.
P3B LIPI.

GMO crops

currently being researched

COCOA
Insect resistant.
UPBP.

SOYBEAN
Insect resistant.
Balitbio.

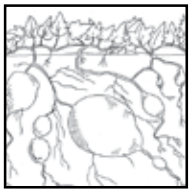
TOBACCO
Virus resistant.
Balitas.

SUGAR CANE
Insect resistant.
P3GI.

PAPAYA
Virus resistant.
Balitbio, Balitas, and Balitbu.

COFFEE
Virus resistant.
UPBP.

CHILLI
Virus resistant.
IPB.



SWEET POTATO
Insect or virus resistant. **Balitbio, Monsanto.**

TIMBER TREES
Insect resistant.
Indah Kiat.

The big question is: Where are they testing these products?

Shouldn't we know where these testing sites are?

How could contamination affect you?

Loss of local varieties – GMO crops are not sufficiently tested for environmental or human health issues. If after more testing is done there are problems with GMO crops, it will be too late, because the local varieties will have the GMO genes in them and they could have the same problems as the GMO crops.

Loss of markets – export and organic markets are not interested in receiving GMO crops so GMO contamination of your crops will prohibit you from accessing these markets.

Would you allow GMO trials on your land?

There is a whole range of potential environmental & human health risks associated with GMO crops and GMO food. Aside from that is the potential contamination of your neighbour's crops if you use GMO.

To protect yourself and everyone in your area against contamination

- Make sure that you are planting local seeds
- Tell your neighbours about the potential risks of planting GMO crops so they will want to do the same
- Work together with others in your area to find out if GMO crop trials are happening in your area.

Case

On March 15th, 2001, 40 tons of GM cotton seeds arrived in Makasar (South Sulawesi) from South Africa. They were imported by PT Monagro Kimia, the Indonesian subsidiary of US-based agrochemicals giant, Monsanto.

Local NGO activists tried to block the trucks from leaving the airport because the seed should have been quarantined for detailed examination before distribution. They accused the company of attempting to disguise what they were doing by using trucks marked "rice delivery". The NGOs also protested against the use of the Indonesian military to guard the trucks.

Source: www.isaaa.org. Herman (2000), Mulyoprawiro, 2000, Slamet-Loedin,2000 "Down to Earth" 49, May 2001.

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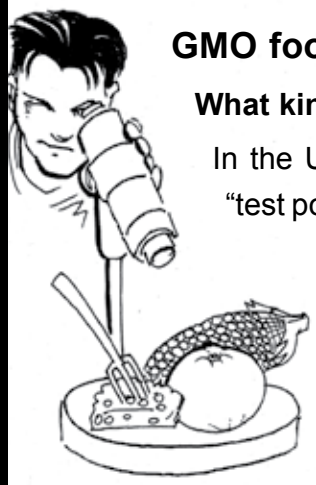
GMO and consumer issues



GMO foods = foods that are made from GMO crops

What kind of foods contain GMO ingredients?

In the US, there are indications that 60-75% of all non-organic supermarket foods "test positive" for GMO ingredients. In general, fresh food or processed food products containing soybeans, corn or canola are products that MAY contain GMO ingredients. Other possible items include papaya, tomatoes, potatoes, squash & sugar beets.

In Indonesia, these products were tested and found to contain GMO ingredients: Isomil Soy Infant Formula, Indofood Soysauce, ABC Soysauce, Bango Soysauce, Pringles Potato Chips, and Simba Corn Flakes.

Possible risks of consuming GMO foods

Toxins and poisons – Genetically engineered products clearly have the potential to be toxic and a threat to human health.In 1989 a GMO brand of a dietary supplement killed 37 Americans and injured more than 5,000 others who already had a pre-existing illness before taking the supplement. Also In 1999, Dr. Arpad Pusztai's research found that GMO potatoes spliced with DNA from the snowdrop plant and the Cauliflower Mosaic Virus, a commonly used viral promoter in making GMO plants, are poisonous to mammals.

Cancer Risks – In the US Monsanto is selling GMO recombinant Bovine Growth Hormone (rBGH), which is injected into dairy cows so they produce more milk. The milk & dairy products of injected cows could pose the possibility of human breast, prostate, and colon cancer. A number of studies have shown that humans with elevated levels of a by-product of this hormone in their bodies are much more likely to get cancer.

Food Allergies – Eating foreign proteins spliced into GMO food products may harm people with food allergies. Stringent pre-market safety testing is necessary to protect public health. Mandatory labelling is also necessary so that those suffering from food allergies can avoid GMO foods and public health officials can trace allergens back to their source if GMO food allergies occur.

Other concerns worth considering

Food quality: Concentrations of beneficial compounds thought to protect against heart disease and cancer were lower in genetically modified soybeans than in traditional strains. These and other studies, including Dr. Pusztai's, indicate that genetically engineering food is likely to result in foods lower in quality & nutrition.

Antibiotic Resistance: When GMO's are made; they often link it to another gene, called an antibiotic resistance marker gene that helps determine if the genes were successfully spliced into the host organism. Some researchers warn that these genes might unexpectedly recombine with disease-causing bacteria or microbes in the environment or in the guts of animals or people who eat GMO food which, could contribute to the public health danger of antibiotic resistance. If infections cannot be cured with traditional antibiotics, this will lead to development of even stronger cures for infections.

Pesticide Residues: The leaders in biotechnology are the same giant chemical companies that sell toxic pesticides. These companies are genetically engineering plants to be resistant to herbicides that they manufacture so they can sell more herbicides to farmers who, in turn, apply stronger herbicides to crops to kill weeds.

So, what can you do about it? As the anti-GMO campaigns in Europe have shown, mass grassroots action is key to stopping GMO and moving agriculture in a sustainable direction...

1. Keep informed on GMO issues by visiting the websites listed below and working with local NGO's.
2. In cities ask your grocery store manager for a written statement on their policy regarding GMO foods. Request that they identify which food products are GMO and which are not, and then label them as GMO or GMO free.
3. Buy your foods from farmers you know and trust are not using GMO crops.

4. Organize public education forums, and news-making events in your local community about GMO Crops & Food.
5. Communicate with your elected public officials, political candidates and regulatory agencies. Ask them to:
   - Ban GMO products.
   - Enforce labelling of all GMO food products.
   - Enforce strict pre-market safety testing of all GMO products.
   - Enforce GMO corporations and labs to be liable and subscribe to long-term liability insurance.

Source: www.greenpeaceusa.org. www.purefood.org. Ditemukan, Produk Makanan Mengandung Bahan Transgenik, Kompas, Feb 2002.

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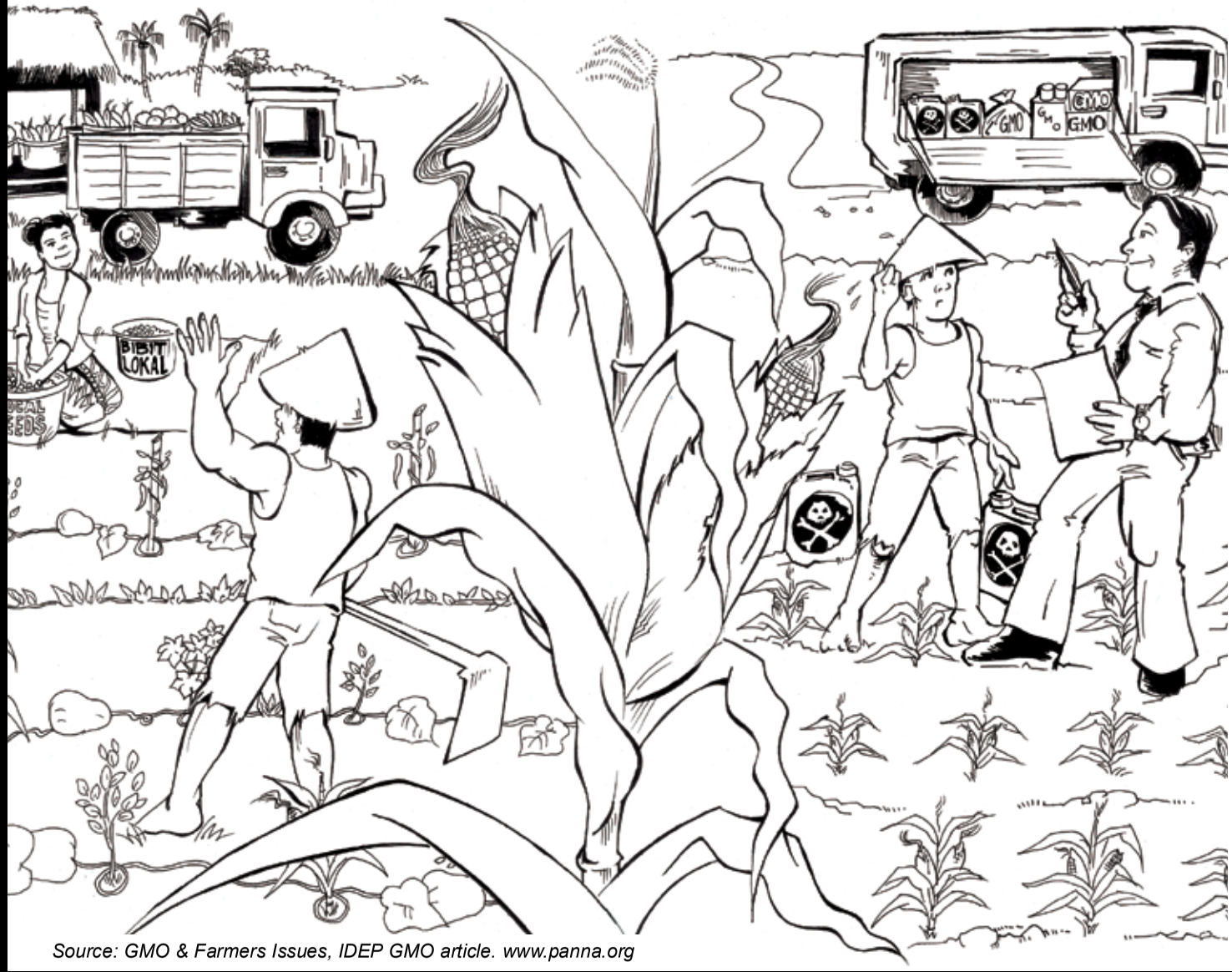
GMO crops and farmers

Potential impacts of GMO crops for farmers:



Source: GMO & Farmers Issues, IDEP GMO article. www.panna.org

1. Lower yields.
Studies show that GMO crops can actually get lower yields.

2. Higher input costs.
GMO seeds cost a lot more money and require other inputs as well.

3. Increased agrochemical use.
Studies show agrochemical use can increase when growing GMO crops.

4. Patent contracts.
GMO companies make you sign a contract controlling your options.

5. Loss of local varieties.
As with hybrids, wide scale use of GMO seeds can cause the loss of local varieties & reducing biodiversity.

6. Unsustainable monoculture.
Growing GMO crops promotes unsustainable monoculture.

7. Loss of organic Bt sprays.
In the world organic farmers use non-toxic Bt (Bacillus thuringiensis) sprays.

8. Complicated management.
With GMO crops you need to use complicated resistance management strategies.

Some potential effects of GMO crops for farmers

1. Lower yields. There are documented studies that show that yields of GMO crops are not what was promised by the companies and certain crop yields are actually lower than conventional varieties.

2. Higher input costs. The cost of GMO seeds is much higher than hybrid seeds and local seeds. Also, there is often the requirement to purchase additional pesticides & fertilizers in a package deal system.

3. Increased agrochemical use. The major form of GMO crops (herbicide tolerant) are designed so that farmers will spray more herbicides on their crops. There are also cases where insect resistant GMO crops (Bt. Crops) actually have higher insecticide use.

4. Patent contracts Farmers using GMO seeds around the world are required to sign contracts aimed at protecting the company's patents on the GMO seeds and also forcing the use of other agro-chemicals and other growing decisions usually left up to the farmer.

5. Loss of local varieties. As this was the case with high adoption of Hybrid seed varieties. GMO seeds could lead to the loss of local varieties. Farmers will no longer continue to save local varieties and because GMO crops may contaminate the local varieties that remain.

6. Unsustainable monoculture. The wide spread use of GMO seeds will lead to a monoculture system of agriculture which through out history has proven unsustainable and very risky both financially because the farmers are dependant on the price at harvest time and ecologically because of pest and disease outbreaks.

---

7. Loss of organic Bt sprays. One of the few organic options for spraying insect & pests is the use of Bt. GMO crops. Using Bt. Genes are going to cause resistance to Bt. and leave organic farmers without that option.

8. Complicated management. To prevent resistance from insect pests, Bt. Crops should use a refuge strategy which means that at least 25% of the farmers land should be grown with conventional varieties and therefore making management much more difficult.

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GMO and chemicals

Is it true that we need less chemicals when farming GMO crops?

How can we trust companies that say: *"Bt. (Bacillus thuringiensis) crops that prevent certain types of caterpillars from eating the plants is the second most widely used GMO technology in the world. It decreases insecticide use, reduces insecticide costs and increases yields for farmers that adopt the technology."*

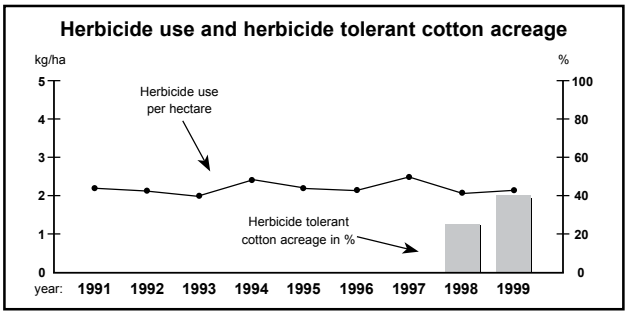
However there hasn't been any significant decrease in insecticide use. In fact in 1999 over a quarter of the cotton growing areas using Bt. Cotton in the US dramatically increased their insecticide use due to a need to eradicate a nontarget pest. If standard pesticides or more sustainable farming practices were being used this may not have been necessary. (See graph for more details).

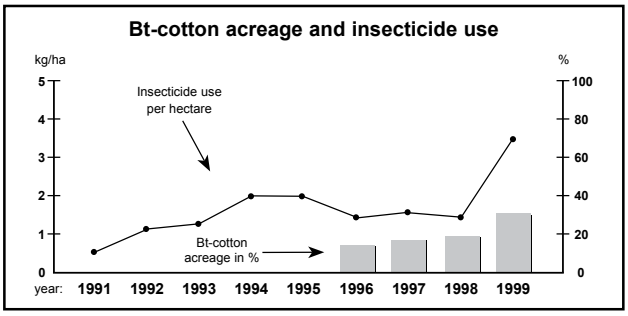
They say the most widely used GMO crops on the world market today are herbicide resistant crops. There are many types of GMO crops commercially grown that have this trait.

The same companies that sell these GMO seeds, own the patent on these seeds. They also sell the specific herbicide that the crops are resistant to, and they own the patent on that as well.

They say the main reason for using herbicide tolerant cotton is to improve weed control and the overall convenience of using the herbicide tolerant system they offer.

However, it seems that there has been no significant decrease in overall herbicide use since the introduction of herbicide tolerant cotton (see graph on right for more details). In fact per acre herbicide use has increased but steadily from 0.81 lbs/acre to 1.06 lbs/acre since the introduction of herbicide resistant cotton.





Some GM products on the world market

These products may be sold outside of the u.s. with different names!

Monsanto

Bollgard® Insect-Protected Cotton
NewLeaf® Insect-Protected Potato
Roundup Ready® Herbicide resistant Soybeans, Cotton & Corn
YieldGardTM Insect-Protected Corn
Bollgard with BXN Cotton (Produced by Calgene, LLC, unit of Monsanto)

Novartis

NK KnockoutTM Corn
NK YieldGardTM Hybrid Corn
AttributeTM B.t. Sweet corn
Novartis Seeds Roundup Ready® Soybeans

Aventis

LibertyLink® Herbicide resistant Corn
LibertyLink® Herbicide resistant Canola
StarLink (Bt.) Corn

American Cyanamid

CLEARFIELD™
herbicide resistant Corn
SMART® Canola Seed

Mycogen

NatureGard® Hybrid Seed Corn
IMI-Herbicide tolerant Corn

DeKalb Genetics Corp

DeKalBtTM Insect-Protected Hybrid Corn
DeKalb Brand Roundup Ready® Corn
DeKalb GR Hybrid Corn

Garst Seed Company

High pH Tolerant Corn Hybrids
Gray Leaf Spot Resistant Corn Hybrids
G-StacTM Corn Hybrids

DNAP Holding Corporation

FreshWorld Farms® Tomato, cherry tomato & sweet mini-peppers
FreshWorld Farms Endless Summer® Tomato

Most of these products are not yet being sold in indonesia which ones are?

Source: BIO Member Survey (www.bio.com) No reduction of pesticide use with Genetically Engineered Cotton.
WWF International 2000, Do GM crops mean less pesticde use? Charles Benbrooke,The Royal Society of Chemistry, 2001.

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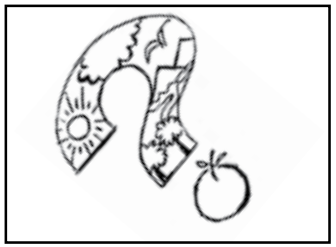
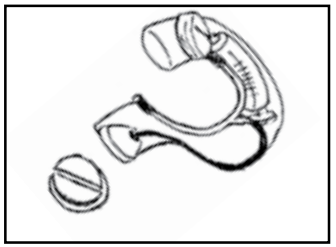
Let's compare agricultural systems

Agricultural systems	From an environmental perspective	From a farmer's perspective	From a health perspective	From the corporations' perspective
Traditional agricultural practices that would have been used in villages 50 years ago, based on many years of development with very little outside influence. All agricultural inputs would have been from the local area.				
Green revolution, conventional, high external input agriculture that arrived in Indonesia in the late 1960's and 1970's. This agriculture system uses hybrid seeds, chemical fertilizers, & chemical pesticides, which need to be purchased.				
Sustainable agricultural system that is based on a "back to nature" approach to farming. It involves less reliance on seed and chemical companies for agriculture production, traditional systems and other innovative ideas.				
Biotechnvological agricultural system that uses genetically engineered or modified seeds that have been developed and imported by large multinational corporations as part of their agricultural system.				

Which agricultural system will you choose for your farm and future?

GMO companies producing seed tell us that they will feed the world

10 reasons they won't:

1. Feed, Not Food.

The two main GMO crops grown commercially in the world – soybeans and corn - are mostly used to feed livestock, not people.

2. Engineering for Convenience.

Research in GMO food has been for the commercial interests of food processors rather than nutritional needs.

3. Substituting Tropical Cash Crops.

GMO is creating substitutes for tropical cash crops which will lead to poorer and hungrier farmers in the developing world.

4. Increasing Farm Debt.

GMO seeds cost a lot more and also require other external inputs, which will lead to poorer and hungrier farmers.

5. Promoting Unfair Farming.

GMO promoters say that farm bankruptcies are a regrettable but necessary price of greater efficiency in agriculture. This leaves farmers without a livelihood.

6. Increasing Destitution.

Displacing "inefficient" small farmers is likely to increase famine and malnutrition not reduce hunger.

Source: Ten Reasons Why GE Foods Will Not Feed the World, prepared by The CornerHouse, UK.

7. Unsustainable Agriculture.

GMO seeds in agriculture are likely to have adverse environmental impacts, which will undermine the ecological basis of food production. Growing monoculture is also very high risk economically as monoculture is more susceptible to pest attack and market fluctuations than multiple-plant cropping is.

8. Lower Yields.

GMO crops do not have significantly increased yields. In some cases, yields are lower than those for conventional varieties of the same crop.

9. Increased Corporate Control.

GMO companies gain near-monopoly control over the growing and marketing of some agricultural commodities.

10. Misreading the Problem.

Underlying the claim that GE foods are needed to feed the world lies a fundamentally flawed analysis of the causes of world hunger.

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Ask yourself about GMO...
is it the best choice for your farm and future?

Info about doing this exercise: To do this activity, show your group the FS.GMO#009.eng. Let's Compare Agricultural System. In a group of any size work your way down the list comparing the systems of Agriculture. The group discussion is more important than the actual answers. This exercise can go quickly or slowly depending on the time available & how much time you want to allow for discussion.

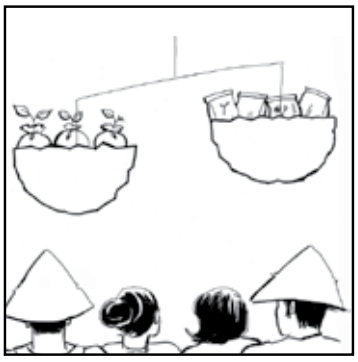
	Aspects of agricultural systems *Including both monetary (things farmers pay or receive money for) and non-monetary items.*	**Traditional Practices**	**Green Revolution**	**Sustainable Agriculture**	**Biotechnology Systems**	**Choose 1 symbol for each box** ↑ positive for farmers ↓ negative for farmers — no change for farmers **Questions**
1	**Seed**					Cost? Available in your village? Can you grow it? More/ less labour?
2	**Fertilizer**					Cost? Available in your village? Can you make it? More/ less labour? Affects on your soil?
3	**Pesticides**					Cost? Available in your village? Can you make it? More/ less labour? Do people using it get sick?
4	**Planting**					Who does it? Cost? More/less labour? Best results from planting system?
5	**Weeding**					Who does it? Cost? More/less labour? Best results from weeding system?
6	**Harvesting**					Who does it? Cost? More/less labour? Best results from harvesting system?
7	**Yield**					Do you get more or less yield? Is product better or worse quality?
8	**Marketing**					Is the crop sold more easily? Do more or less people want to buy or use your crop?
9	**Selling price**					Is the price you sell your crop for higher?
10	**Food at home**					More or less food at home? Is it produced on your farm? How easy is it to store?
11	**Export**					What is the export potential? Are other contries interested in buying the crop?
12	**Cultural**					Has this system had an impact on the local Culture? Ceremonies, gifts, local food etc?
13	**Plant biodiversity**					Are there more or less species of crops? Are more or less varieties or each type of crop grown?
14	**Social**					How systems change social practices (labour, how people work together etc) in your village.
15	**Water quality**					Do the streams have more or less insects, fish, frogs etc? Is the water more clear/clean?
16	**Soil quality**					Does the soil have more or less living things in it? Is the land harder or difficult to dig?
17	**Beneficial insects**					Are there more or less beneficial species (spiders, ladybugs) in the system?
18	**Other insects + mammals**					Do you have more/less rat problems? Are there more/ less animals in and around your fields?
19	**Risk**					What happens if price of the crop decreases? What happens if pests destroy your crop?
20	**Legal issues**					Are there more/less legal documents in this system? Land contacts, seed contracts etc.

Do you want a genetically modified future?

Some ideas for using this exercise

Facilitator preparation

For this exercise it is important to have a knowledgeable facilitator. The facilitator will have to already understand the 4 basic forms of agricultural systems or else take some time to learn about the basic issues surrounding them. The GMO awareness series will help with background fact sheets and articles on Biotech agriculture.



Group discussion

Start by comparing Traditional agriculture with Green Revolution agriculture. Ask the questions listed, plus any other related questions on the topic. Any specific topic may include some things that are better or worse. Allow a few minutes of group discussion for each and then put the issue to a vote.

Vote and fill in the table

Let the group decide which symbol to put for Green Revolution system issues. Put an up arrow in the box if the participants feel that activity is better for the farmers. Put a down arrow if they feel it is worse. Put a dash if there is no change or difference between the systems and its effects on farmers.

Group discussion and summary

Spend a few minutes after each comparison to summarise the pros and cons of each of the agriculture systems discussed. Then compare the Green Revolutions system to a Sustainable Agriculture system and follow the same instructions as above. Put the votes in to the appropriate boxes. Continue this until you finish comparing Biotechnology Agriculture to Sustainable Agriculture.

Follow up to this exercise

After that you can engage in a discussion on which system is preferable and what methods can be used to achieve it. This would be a good time for the groups to make some action plans for further training and discuss how to facilitate that training. For example, where to find the resource people for Sustainable Agriculture training.

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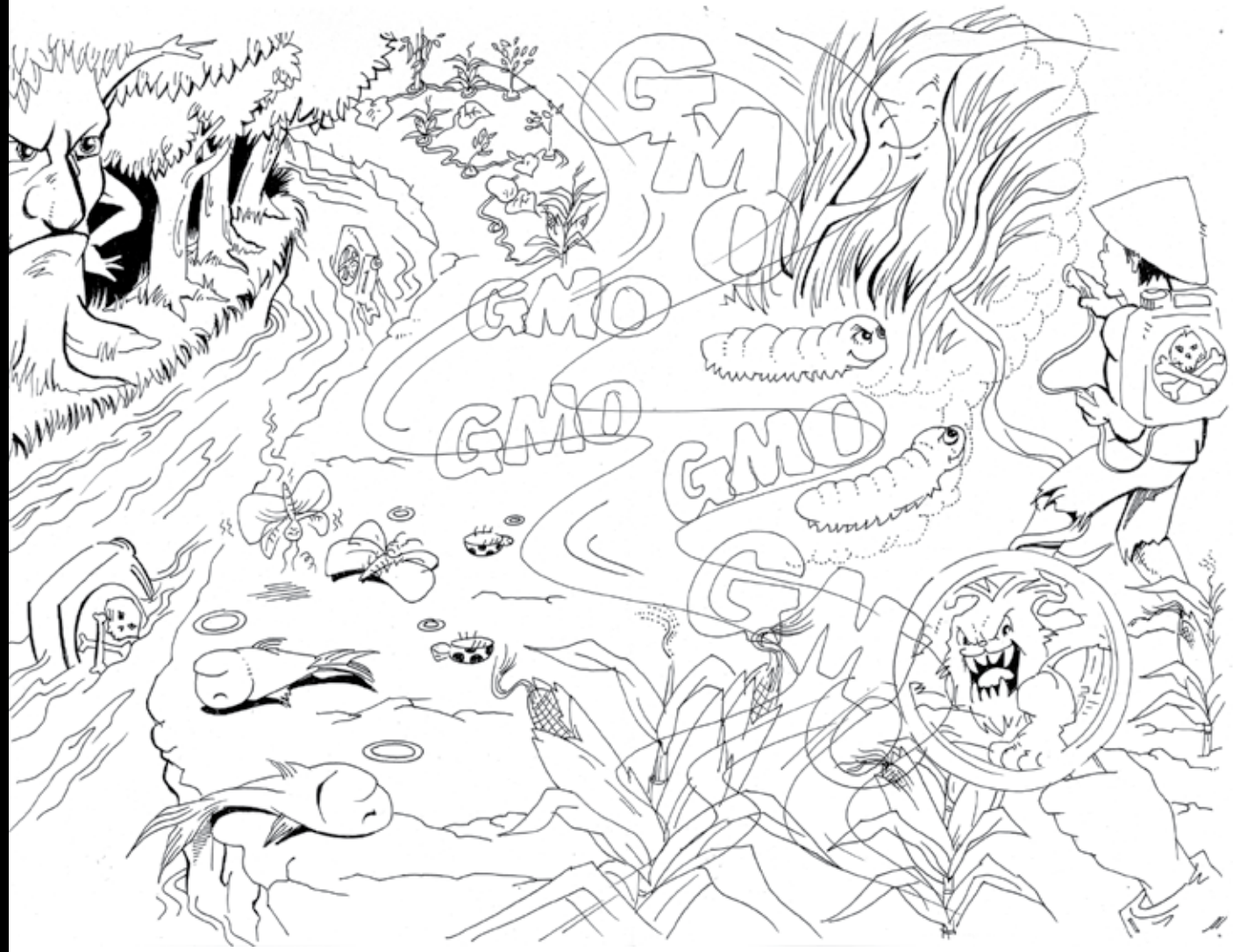
GMO and the environment

Your natural environment could look like this...



Do you want a genetically modified future?

1. Genetic Pollution.
Genes from GMO plants can breed with non-GMO plants, contaminating local varieties.

2. Negative Effects to Soil.
GMO plants could negatively impact the soil ecology of the land they grow in.

3. Super Weeds.
Weeds could develop herbicide resistant traits causing the need for more toxic chemicals.

4. Super Pests.
Pests will most likely develop resistance to the insecticidal proteins of GMO crops.

5. Plant viruses.
Viruses often mutate and GMO crops resistant to viruses could speed up this process.

6. Insect & Animals Impacts.
Non-target insect and animal species may also be affected by GMO Bt (Bacillus thuringiensis) Crops.

7. Loss of Biodiversity.
How are GMO crops going to interact with existing species on the planet?

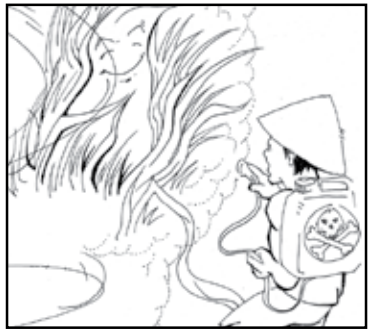
8. Forest Ecology Impacts.
Faster growing GMO species have the to potential to out compete native plant for sunlight, nutrients and water.

Source: www.purefood.org, www.psrast.org/soilecolart.htm

Possible effects that GMO crops can have on the environment

1. Genetic pollution. Wind, rain, birds, bees and insect pollinators have begun carrying genetically-altered pollen into adjoining fields, polluting the DNA of crops of organic and non-GE farmers.

2. Negative effects on soil. Research has shown that GMO Bt. crops can effect beneficial soil microorganisms. GMO crops could transfer genes to local soil micro-organisms and this may affect both soil ecology and fertility.



3. Super weeds. Herbicide resistant GMO crops have the potential to cross-pollinate genes with related weed species in the area. These weeds could then become herbicide resistant, which would then require stronger, more toxic chemicals to control them.

4. Super pests. Because of their short life cycles, insect pests are known to gain resistances to specific pesticides in a very short period of time. Will this be the case with GMO crops that produce insecticidal proteins such as Bt. Crops?

5. Plant viruses. Studies are indicating that GMO plants that resist viruses can cause the viruses to mutate into new, more virulent forms. This has the potential to cause even further damage if the virus strains continue to mutate, making plant diseases more difficult to control and treat.

6. Insect and animal impacts. Studies are starting to show that GMO Bt. crops are adversely affecting a number of beneficial insects including ladybugs, lacewings, bees and possibly birds. There is also a controversial report that GMO crops have effects on certain butterfly populations.

7. Loss of biodiversity It's unclear how GMO plants will interact with existing species on the planet. Without proper testing, local and global biodiversity could be in danger. Genetic contamination of related species is a definite possibility. There could be many as yet unknown interactions between species that may cause a major concern.

8. Forest ecology impacts. GMO trees are designed to grow very quickly. Because of this they have the potential to compete with local tree varieties for nutrients, water and sunlight, completely changing the ecology of the forests in which they grow.

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Agriculture & IPR (Intellectual Property Rights)

Owning exclusive rights to plants and animals?

Intellectual property rights

Transnational companies have the right to patent seeds that they have been able to modify genetically. Farmers will be tied into contracts to buy both seeds and chemicals, and will not be allowed to plant farm-saved seed. If a farmer uses genetically engineered seeds, that farmer has to sign a gene licensing agreement, which includes royalty fees and specifies the seed, fertilizer and chemicals that must be used.

80% of the patents on GM foods are owned by just 13 corporations. Such rights have traditionally been associated with non-living inventions in industrialized and market-based economies. Now they are being used in agriculture. Patents are generally granted by a government authority conferring the exclusive right to make, use or sell an invention (including GMOs) for a period of 20 years.

A real life case

Percy Schmeiser was accused by Monsanto because he, they say, planted GMO Canola seeds without a license and did not pay the royalty fee to the company for using its technology. He claims he did not buy Monsanto's patented seed, nor did he obtain the seed illegally, and that pollen from genetically engineered canola seeds blew onto his land from neighboring farms. Monsanto's inspectors came to his farm and took seed samples without his permission. It would appear that Percy Schmeiser was a victim of genetic pollution from GMO crops.

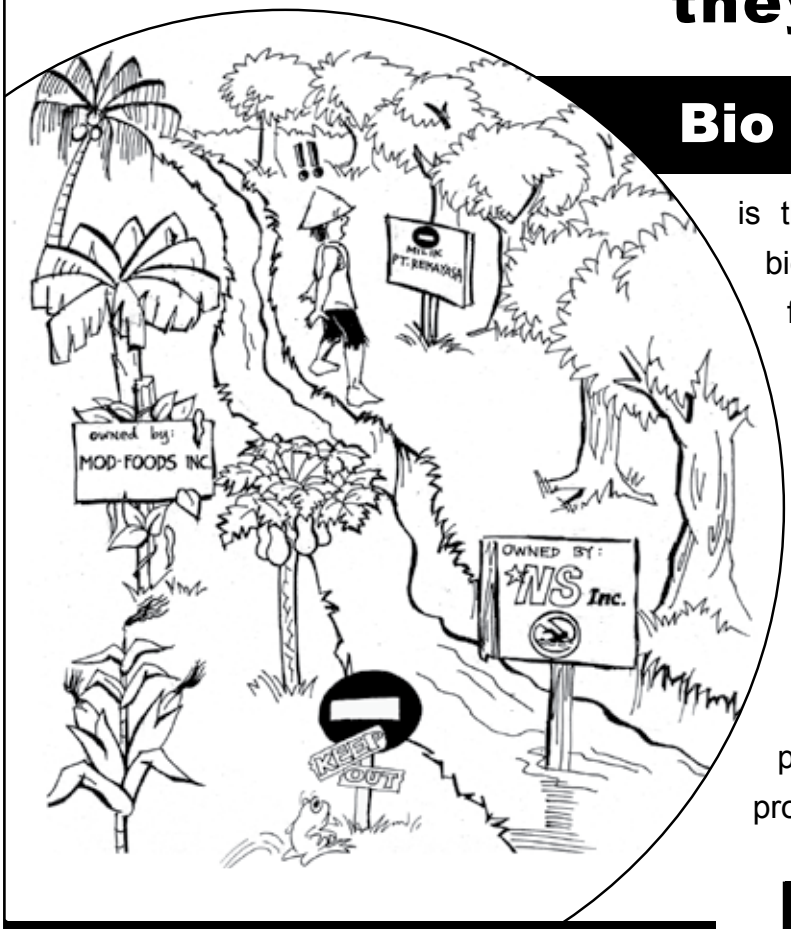
The court ruled that he must pay Monsanto CN$ 19,832 for licensing fees and CN$153,000 for Monsanto Court costs. Not to mention the case costs to the Schmeisers, which was CN$200,000. To pay this, they had to mortgage their land and use most of their retirement savings.

1. Farmers and native people will no longer be able to use seeds or natural resources available in their environment, or to implement agricultural methods that they have long used. Instead, they will have to pay royalties to big companies or a group of people who own agricultural product patents.

2. Monopoly practices could occur. Only small numbers of giant companies will own the patents that will give them "special rights" to seeds in the world. That mean, they will have a monopoly and determine prices, as they choose.

3. This will of course increase farmers' dependency on giant multinational companies.

If they patent our rice...
they patent our life!



Bio prospecting

is the exploration, extraction & screening of biological diversity and indigenous knowledge for commercially valuable genetic and biochemical resources. A growing number of pharmaceutical corporations and biotechnology companies (& their intermediaries) are researching the forests, fields and waters of the developing world in search of biological riches and indigenous knowledge. Northern based institutions seek access to tropical biodiversity for the primary purpose of developing patented & profitable products.

Bio piracy

is theft or robbery of biological and genetic resources indigenous to a country. These biological resources are often the main targets of enterprising businessmen because of their many uses in agriculture, health care and chemical industries. The process of bio piracy involves collection of samples of biological resources; this material then undergoes product development for use on a commercial scale. Also, with bio piracy, there is no need to pay any financial compensation to the country where the biological material originated. This material is often patented.

Source: www.percyschmeiser.com, www.natural-law.ca/genetic/NewsMay-June98/GENews5-15Rice.html

A real life case

A seed company from Texas, RiceTec patented three hybrid versions of Basmati - they are Texmati, Jasmati, and Kasmati. Ricetec produced the varieties by crossbreeding Basmati seed with American long grain rice. RiceTec was also given permission to claim that its brands (the Texmati, Jasmati, & Kasmati) are “superior to Basmati”.

This company is now able to produce their own rice in America, sell it in America and even export it. That means India may lose its lucrative Basmati export market in America and other countries in the world. The Indian government is concerned, because Basmati rice export makes a large contribution to India’s income, & has been the source of living for many poor Indian farmers.

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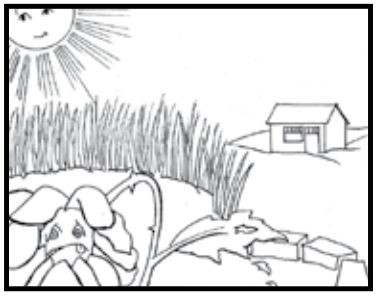
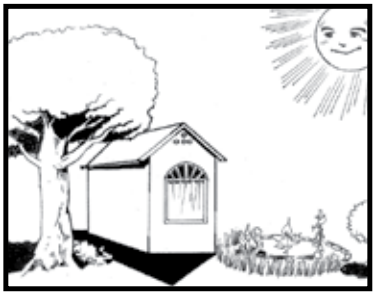
Make a Kitchen Garden

1 Choose the best location for your kitchen garden

(start small first, just 2m^2 is enough)



Locations with too much sun aren't good.



This location is perfect, it gets morning sun, some shade, and is near the kitchen.

Locations with too much shade won't work either.

2 Now, choose the plants...

Plant choice check list:

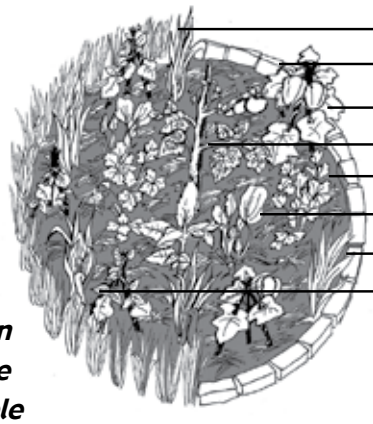
1. Choose plants you like! ☐
2. Will they grow quickly? ☐
3. How big they will get? ☐
4. Is it the right climate? ☐

You can choose from our organic seedlings or get some cuttings from friends. Write your choices here:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Draw your garden plan here...

3 Make a garden plan...



This is an example of a simple garden plan.

Fill the space, but don't crowd your plants.

Now that you have a good plan for your garden, turn the page to see what you'll need to start gardening!

Materials you will need to get started...

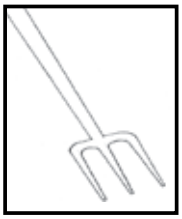
LOCATION
choose the best location.

SEEDLINGS
choose at least 5 different types of plants.

COMPOST
you will need a lot, enough to cover your garden with 5cm all over.

MULCH
grass clippings, dry leaves, sawdust, straw, etc.

GARDEN SPOON
or some other tool to make holes for seedlings.



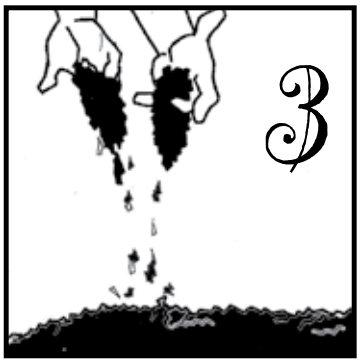
RAKE
or some other tool to break up the soil of the garden bed.

WATER
using a spray nozzle hose or a watering bucket.

How to prepare the land and start planting...

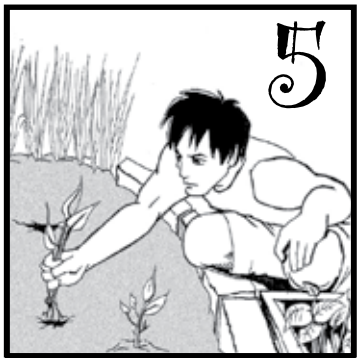
Create a garden border following your garden plan. Use bricks, stones, or a border plant.

Break up the soil. Don't walk on soil you've already loosened up!

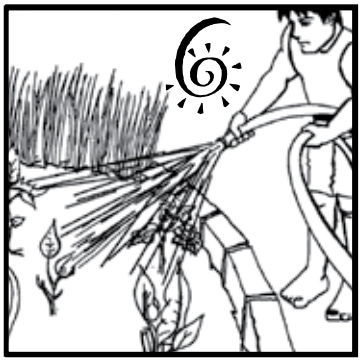


Add a 5cm thick layer of compost on the soil. You'll need a lot of compost, so you may want to make it at home.

Mix the soil and compost together. You can use your hands – it feels great!



Plant your seedlings following your garden plan. Then, label your plants so you can easily manage them.



Water your plants. You don't need to water them everyday, but make sure they don't get too dry.

Add some compost around the base of the seedlings, but make sure you leave space for them to "breathe".

Observe your garden everyday!

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Daily Garden Checklist

Enjoy the scenery and harvest when your plants are ripe.

Daily maintenance

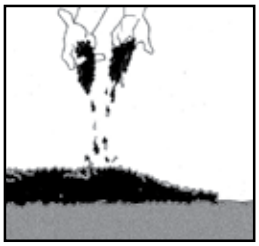
Water your garden. Not too much - moist but not really wet.

Remove weeds, anything that you didn't plant or can't use.

Check for pests and remove them by hand immediately.

Add more compost or mulch if you see any exposed soil.

After harvesting annuals, start the planting process again. You can keep harvesting perennials again and again.



Cover soil with about 5cm of good compost.

Mix soil and compost together.

Plant seedlings, try different types of plants.

Water your garden thoroughly after planting.

Put compost around seedlings and mulch space between them.

Use walls or trees for growing climbing plants like marquesa or pumpkin!

Some important tips...

- Fill empty spaces with new seedlings (more food, less room for weeds).
- If a crop doesn't work – don't worries, just try a new one.
- Planting the same thing in the same place too many times causes pests.
- Ants love to eat seeds. If you use seeds, try planting seeds in pots and then transplanting them when they're ready.

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Notes...

A Companion Planting Chart

☺ = companion
X = antagonistic

	Apple	Apricot	Asparagus	Basil	Beans	Broad Beans	Bush Beans	Climbing Beans	Beets	Borage	Broccoli	Brussell Sprouts	Cabbages	Chamomile	Carrots	Cauliflower	Celery	Cherry
Apricot				☺														
Asparagus				☺														
Basil		☺	☺															
Beans											☺	☺	☺		☺	☺		
Broad Beans											☺	☺	☺			☺		
Bush Beans									☺		☺	☺	☺			☺	☺	
Climbing Beans									X		☺	☺	☺			☺		
Beets							☺	X			☺	☺	☺			☺		
Borage											☺	☺	☺			☺		
Cabbages					☺	☺	☺	☺	☺	☺				☺			☺	
Carrots					☺													
Celery							☺						☺			☺		
Cherry																		
Chervil																		
Chives	☺		☺		X	X	X	X							☺			☺
Coriander											☺	☺	☺		☺	☺		
Corn					☺	☺	☺	☺										
Cucumber				☺	☺		☺			☺	☺	☺	☺		☺	☺		
Dill									☺		☺	☺	☺		☺	☺	☺	
Eggplant					☺													
Fennel				☺	X	X												
Marigold	☺	☺			☺						☺	☺	☺			☺		☺
Fruit Trees															☺			
Garlic	☺	☺			X	X	X	X					X					☺
Gooseberry																		
Grape Vine																		
Grass	X	X																X
Horseradish	☺	☺																☺
Lavender													☺					
Leeks															☺		☺	
Lemon Balm	☺	☺																☺
Lettuce					☺	☺		☺	☺				☺		☺			☺
Marjoram			☺		☺	☺	☺	☺	☺		☺	☺	☺		☺	☺	☺	
Mints													☺	X				
Mustard	☺	☺																☺
Nasturtiums	☺	☺									☺		☺					☺
Onions					X	X	X	X	☺				☺		☺			
Parsley			☺		☺													
Parsnip					☺										X		X	
Potato	X				☺	☺	☺		☺		☺	☺	☺			☺	X	X
Pumpkin																		
Radish								☺							☺			
Raspberry																		
Rosemary					☺								☺					
Roses																		
Rue				X							X		X		☺	X		
Sage					☺								☺					
Shallots					X													
Silverbeet				X					☺									☺
Spinach	☺	☺				☺												☺
Strawberries							☺			☺	X	☺	X			X		
Sunflower		☺					☺	X				☺						
Tansy	☺	☺								☺			☺					☺
Thyme													☺					
Tomato		X	☺	☺					X	☺	☺				☺	☺	☺	
Yarrow	☺	☺																☺
Zucchini																		

	Chervil	Chives	Coriander/Dill	Corn	Cucumber	Fennel	Marigold	Fruit Trees	Garlic	Grape Vine	Lettuce	Marjoram	Mulberry	Nasturtium	Onions	Parsley	Peas	Pennyroyal
Apricot							☺		☺					☺				
Asparagus												☺				☺		
Basil		☺			☺	☺												
Beans		X		☺	☺	X	☺		X	☺	☺	☺			X	☺	☺	
Broad Beans		X		☺		X			X		☺	☺			X			
Bush Beans		X		☺	☺				X			☺			X			
Climbing Beans		X		☺					X		☺	☺			X			
Beets											☺	☺			☺			
Borage					☺												☺	
Cabbages			☺		☺		☺		X		☺	☺		☺	☺		☺	☺
Carrots		☺	☺		☺		☺				☺	☺			☺		☺	
Celery												☺					☺	
Cherry		☺					☺				☺			☺				
Chervil			☺						☺		☺					☺		
Chives								☺				☺	☺				X	
Coriander	☺					X												
Corn					☺							☺					☺	
Cucumber				☺							☺	☺		☺			☺	
Dill	☺		☺		☺	☺												
Eggplant												☺						
Fennel																		
Marigold								☺			☺		☺					
Fruit Trees		☺					☺		☺					☺				
Garlic								☺					☺				X	
Gooseberry																		
Grape Vine													☺					
Grass								X					☺					
Horseradish																		
Lavender						X			☺			☺						
Leeks												☺			☺			
Lemon Balm								☺					☺					
Lettuce	☺				☺		☺					☺			☺	X	☺	
Marjoram		☺		☺	☺						☺				☺		☺	
Mints																X		
Mustard								☺		☺			☺					
Nasturtiums					☺			☺					☺					
Onions											☺	☺				☺	X	
Parsley		☺									X				☺			
Parsnip		☺	☺	☺							☺	☺			☺		☺	
Potato				☺	X		☺					☺		☺			☺	
Pumpkin				☺								☺						
Radish	☺			☺	☺						☺	☺		☺				
Raspberry							☺										☺	
Rosemary									☺									
Roses		☺					☺		☺					☺	☺	☺		
Rue																		
Sage					X												☺	
Shallots												☺					X	
Silverbeet								☺				☺	☺		☺			
Spinach								☺				☺	☺					
Strawberries		☺					☺				☺				☺			
Sunflower					☺				X									
Tansy					☺			☺		☺			☺					
Thyme																		
Tomato		☺				X	☺			☺		☺		☺	☺	☺		
Yarrow								☺		☺			☺					
Zucchini				☺								☺		☺				

	Potatoes	Pumpkin	Radish	Rosemary	Roses	Rue	Sage	Savory	Silverbeet	Spinach	Squash	Strawberry	Stinging Nettle	Sunflower	Tomato	Yarrow	Zucchini
Apricot										☺			☺	☺	X	☺	
Asparagus															☺		
Basil						X			X						☺		
Beans	☺			☺			☺	☺									
Broad Beans	☺									☺							
Bush Beans	☺											☺		☺			
Climbing Beans			☺											X			
Beets	☺								☺						X		
Borage											☺	☺			☺		
Cabbages	☺			☺		X	☺					X			X		
Carrots			☺	☺			☺								☺		
Celery	X														☺		
Cherry	X								☺	☺							
Chervil			☺													☺	
Chives					☺							☺			☺		
Coriander																	
Corn	☺	☺	☺								☺						☺
Cucumber	X		☺				X							☺			
Dill															☺		
Eggplant	☺																
Fennel															X		
Marigold					☺							☺			☺		
Fruit Trees									☺	☺			☺			☺	
Garlic				☺	☺							X					
Gooseberry															☺		
Grape Vine															☺	☺	
Grass							X									☺	
Horseradish	☺				☺								☺				
Lavender					☺				☺			☺					
Leeks																	
Lemon Balm					☺												
Lettuce			☺									☺					
Marjoram	☺	☺	☺						☺	☺	☺				☺		☺
Mints															☺		
Mustard																	
Nasturtiums	☺		☺		☺						☺				☺		☺
Onions					☺			☺	☺			☺			☺		
Parsley				☺	☺										☺		
Parsnip	☺		☺				☺								☺		
Potato																	
Pumpkin	X																
Radish																	
Raspberry	X					☺											
Rosemary	X						☺								X		
Roses						☺	☺										
Rue					☺		X										
Sage				☺	☺	X						☺					
Shallots																	
Silverbeet																	
Spinach												☺					
Strawberries							☺			☺							
Sunflower	X										☺						
Tansy					☺						☺					☺	
Thyme					☺												
Tomato	X			X									☺				
Yarrow																	
Zucchini																	

Some Natural Insect Repellant Tips

Ants
Mint • Catmint • Tansy • Garlic • Pennyroyal • Spearmint •

Aphids
Orange Nasturtiams • Tomato leaves • Basil • Spearmint • Onions • Stinging Nettle • Garlic •

Cabbage Butterfly
Rosemary • Mint • Dill • Sage • Hyssop Garlic • Oregano • Spearmint • Tansy • Thyme • Chamomile •

Caterpillars
Garlic • Tomato Leaves • Pepper on plant's leaves •

Fleas
Tansy • Pennyroyal • Wormwood • Spearmint • Fennel •

Flies
Tansy • Rue • Wormwood • Eau de Cologne • Mint • Basil •

Fruit Fly
Tans • Basil •

Fungus
Stinging Nettle • Sage • Horseradish

Mice
Wormwood • Spearmint • Mint

Mildew
Chives • Dried Sage • Nettle •

Mosquitoes
Tansy • Pennyroyal • Garlic • Worwood • Sassafras: Place near windows/doors, or rub on skin

Moths
Sage • Mint • Rosemary • Thyme • Pennyroyal • Wormwood • Lavender • Spearmint •

Red Spider
Onion •

Slugs
Oak leaf mulch • Dry Rosemary • Wormwood •

Snails
Garlic: Collect with cabbage leaves or inverted citrus peel cups

Thrips
Pyrethrum •

Tomato Worm
Garlic •

Weevils
Garlic •

White Fly
Nasturtiums • Basil: Use as spray

IDEP

This fact sheet was developed by IDEP Foundation • www.idepfoundation.org • Based on the Companion Planting Chart © Perennial Products NSW

Notes...

Gurih Gurih Gizi (GGG) Recipe

A SIMPLE RECIPE FOR GOOD HEALTH

One tablespoon of GGG has all your daily needs for vitamin A, iron, and iodine, and it tastes great. This formula has been approved by nutrition scientists as being good for children, pregnant, and lactating women. GGG is easy to make and can be stored for a long time. The main ingredients for making it are vegetables that you can harvest from your own garden.

Ingredients needed to make +/- 50 GGG servings:

- **1 kg fresh greens (5 types listed below).**
- **1½ tablespoons of iodized salt.**
- **1½ tablespoons of sugar.**
- **½ a cup of roasted peanuts or sesame seeds.**
- **3 tablespoons of milk powder or coconut shavings.**
- **1 cup of rice flour.**
- **1 ltr fresh frying oil (after making GGG, you can use the oil again to cook something else).**

iodized salt

sugar

5 types of greens:

marunggai

water spinach

sweet potato leaves

spinach

pakchoi

rice flour

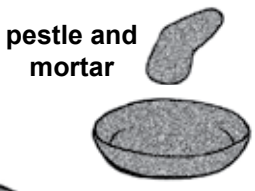
milk powder or coconut shavings

peanuts

cooking oil

Cooking utensils needed:

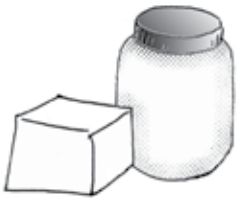
spoon



pestle and mortar

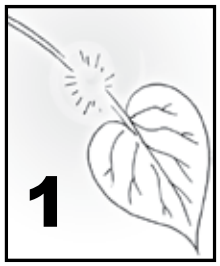
frying pan

metal sieve



sterile and air tight container for storage

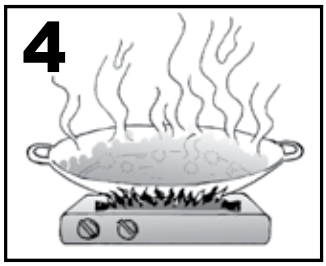
HOW TO COOK GURIH GURIH GIZI (GGG)



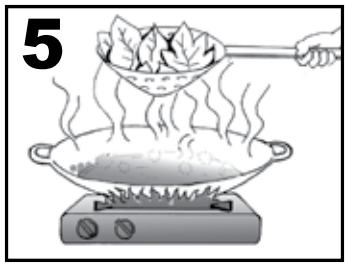
Separate leaves from their stems.

Wash the leaves thoroughly.

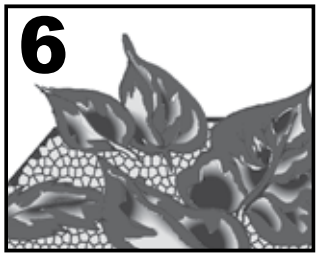
Dry the leaves.



Heat enough oil to cover the leaves in the wok.

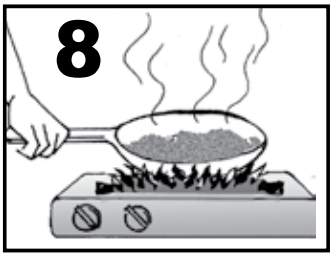


Fry the leaves until they are completely dry, then strain.



Make sure to drain all the oil from the fried leaves.

Crush the crispy leaves with a pestle.



Toast the peanuts and flour, without oil, until they turn golden brown.

Put all the ingredients into a bowl.

Mix everything together.

IF YOU LIKE, YOU CAN ADD CHILLI, SUGAR, OR SALT TO TASTE

With one tablespoon of GGG everyday, all your iron, iodine, and vitamin A needs will be fulfilled.

How to enjoy GGG: Sprinkle it on rice, porridge, noodles, or something else.

You need to store Gurih Gurih Gizi in air tight and sterile containers. Stored in this way, GGG will keep for 3 months, or if kept in a refrigerator it will keep for 6 months.

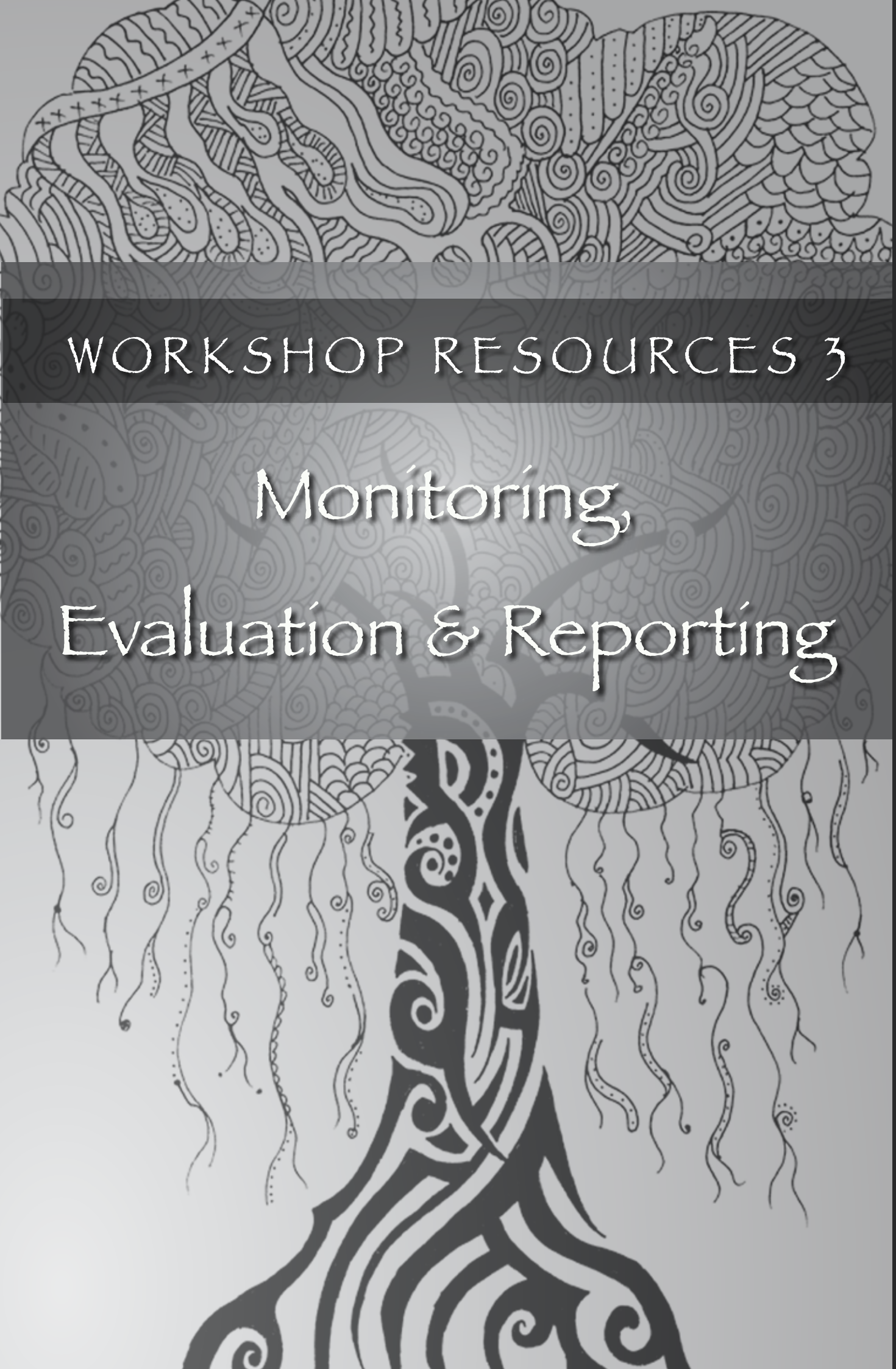
IDEP

This fact sheet was developed by IDEP Foundation

More information: www.idepfoundation.org

Catatan...

Notes...



WORKSHOP RESOURCES 3

Monitoring, Evaluation & Reporting

Resources for Permaculture Workshops and Follow-up - Monitoring, Evaluation, and Reporting

Notes...

About monitoring and evaluation

What is monitoring and evaluation, and why is it so important?

- **Monitoring** provides us with information that helps us to understand the impacts of a program.
- **Evaluation** provides us with data on the impacts of the project, which helps us to assess the impacts of the overall project.

Monitoring and evaluation is not just about reporting successes.

As dedicated development activists we care about the results of our work. We work hard to do things that will increase harmony and sustainability in our world.

Monitoring and evaluation can help us determine:

- **How well have we really done?**
- **Are there ways we could do even better?**
- **How can we design programs which create the most benefit?**

Our main aim as sustainable development activists is to improve the lives of the program beneficiaries (the people that participate in or are affected by our work) in a way that will increase over time. However, people often forget:

- To ask the program beneficiaries **how they feel about the program** - how they believe their lives have been improved or changed.
- To find ways to determine the longer-term impacts of programs.

For this reason it is important to conduct both '**quantitative'** and '**qualitative'** monitoring and evaluation, and to conduct your monitoring and evaluation over an extended period of time - see below for more details.

About evaluation over time

Evaluation should be done regularly, over an extended period of time as:

- Many of the results and positive benefits of Permaculture techniques will continue to become clearer over time.
- You need to determine whether your training/program is sustainable - continues to work and even increase in benefits on a longer term basis.

About quantitative evaluation

Quantitative evaluation is objective - that means it is based on the goals of the program and the indicators which tell you if these goals have been achieved. It uses numerical measurements, data analysis and statistical methods.

Quantitative evaluation should help you to determine things like which techniques or lessons have been successful, and which have not.

An example of quantitative evaluation would be to count:

- The number of participants who have taken part in training/program.
- How many of them were women.
- Their age.
- Their regular activities before they participated in the training/program.
- Their level of knowledge/understanding about the topics.
- What their environments were like before they participated in the program.

We can then check to what degree the training/program has changed those same people and their environments over time by counting:

- The number of participants who are actively using Permaculture techniques in their community (usually done during follow-up visits to the field).
- How many of them are women or men - helps you to fill gaps and design special activities that are most effective for women and men.
- Which activities are more suitable for different age groups/people with different regular activities.
- How many of them changed their activities because of the training/program?
- What aspects of their environments changed because of the training/program?

By determining the right questions which will provide us with the important information needed to determine the results, **and being honest about the answers,** we can learn many things from quantitative evaluation. Most importantly, we can learn how to increase the benefits and the success of our work over time. We can also learn how to be most effective and efficient so we can make the most of our limited time and resources.

About qualitative evaluation

Qualitative evaluation is subjective - it offers an important opportunity for program beneficiaries themselves to identify the program impacts and important changes (both positive and negative) that they have experienced because of the program.

These changes are ones that directly relate to their own lives instead of a series of goals and indicators that are established by the program designers. Qualitative evaluation should use descriptions or interpretations of those descriptions otherwise it may not work. It is usually more participatory than quantitative evaluation.

During a training or at the start of a program we can ask the participants to:

- Identify what they feel are the most important aspects of the training/program.
- Provide reasons why they think those aspects are the most important.

In follow-up visits:

- The same participants can be interviewed one-on-one or through focus group discussions and asked to describe their experiences with the program and identify positive and negative results.

About participatory monitoring and evaluation

Evaluation is often viewed as something that is **'done to people'** - i.e. someone or a group **'is evaluated'.**

Participatory evaluation is controlled by the people in the program or the community. It is a process of reflection and consideration that assists people's development and empowerment.

When monitoring and evaluating the impact of a particular training or program, facilitators need to remember that:

Your students are your best teachers.

Permaculture is a very participatory approach to community development.

The training system outlined in the 'Facilitator's Handbook for Permaculture' is designed to allow participants to solve problems as a group through creative thinking exercises and to work together to find the most culturally and environmentally appropriate approaches to sustainable living through participatory field activities.

Permaculture is about designing and implementing integrated designs, and therefore, with Permaculture programs there are many variables and aspects of a program which can be evaluated when conducting assessments.

By using participatory monitoring and evaluation methods, the project beneficiaries can teach you many things you had not even noticed before about the benefits and challenges faced when implementing Permaculture in practice.

To understand the wide range of benefits of a Permaculture program, and to ensure that the program's beneficiaries take part in at every level of the program cycle, it is important that program beneficiaries actively participate in the monitoring and evaluation of follow-up activities.

This can be done easily by:

- Collecting stories or pictures from the participants.
- Conducting focus group discussions.

These approaches enable participants to actively identify the positive and negative elements of the activities.

This section includes 4 different monitoring and evaluation tools which can help Permaculture designers and workshop facilitators to evaluate Permaculture designs and monitor and evaluate program impacts at the community level:

1. **Permaculture design checklists.**
2. **Project monitoring and evaluation booklet.**
3. **Participatory surveys and focus group discussions outline.**
4. **Most Significant Change (MSC) stories.**

Notes...

Permaculture design checklists

External influences checklist

The following checklist is useful for assessing a complete Permaculture system design and/or any components you plan to integrate into a system before you implement it (e.g. compost bins, kitchen, chicken shed, windbreaks, nursery, car park, etc).

- **External influences**: the external influences of your program may be different from the list below, list whatever external influences affect the site.
- **Observe**: list your ideas of how you can use observation to assess how these external influences may have an impact on the site.
- **Potential impacts**: While at the site, note how these external influences actually do impact the site and think about how they may impact the site at other times.
- **Strategies**: List your ideas about what strategies can be implemented to use or deflect these external influences so that they work to the best advantage for your design.

Component: Liquid Compost production

Planned Location : Beside the compost bins

External influences	Observe	Potential impacts	Strategies
Wind	• Direction. • Strength. • Regularity.	Good wind for production, redirect the wind away from the house	Add a wind mill to the system to stir the liquid compost and add air
Sun	• Direct sunlight. • Shade. • Temperature at various times of the year.	Direct sunlight may cause evaporation, high temperatures, and kill bacteria	Create a covered production/ storage area to reduce evaporation
Water	• Access to water. • Rainfall. • Water flow at site. • Areas which flood.	Flat areas may flood in the rainy season	Create a ditch to channel the extra water into the gardens below, put container near water source for storage
Fire	• Fire history. • Direction fire tends to come from.	Damaged facility	Keep away from materials that burn easily
Wild animals	• Types of animals. • Direction they move. • What they can damage.	Mosquitoes will nest in the liquid compost	Put a living fence around the liquid compost storage area, close top of the liquid compost
Pollution	• From water ways. • From roads. • From chemical sprays.	No problem here	
Utilities	• Water pipes. • Electricity lines.	Provide water and aeration of the liquid compost	Position utilities safely, put an aerator in the liquid compost
Disaster	• Earthquakes. • Landslides. • Storms.	Slope may slide if very strong rains	Plant the slope just above the facility with neem & vetiver
Traffic/ access	• Proximity to other areas. • Material in, products out.	Training area	Ensure enough space for trainees and easy access
Neighbors	• Sharing of resources. • Bothering them.	Ibu Purniyati complained about proximity	Ask Ibu Purniyati to help with gathering the materials and share liquid compost with her

Permaculture principles checklist

The following checklist can be useful for checking if your design or component uses as many of the Permaculture principles as possible.

Principle	Considerations	Assessment
Diversity	Are there a variety of beneficial plants and animals used? How do they interact?	Plant rice and green beans, green beans will release nitrogen in the soil. Ducklings (1-2 months old) eat the weeds in the rice field.
Edge effect	Which natural systems are overlapping? How does this help the design?	Plant flowers, foods (sweet potato, cassava, bamboo, taro, etc) on edge of the fishpond. This is beneficial for the fish and trees.
Energy planning	Does the design make maximum use of gravity, wind, water, etc?	Plant legume trees (gamal, lamtoro, turi, etc) along the rice field border as a wind break. The legume trees will produce fodder for the animals.
Energy cycling	How does the design recycle and reuse resources as many times as possible?	Use old tires or bamboo as garden beds, pots, or borders.
Scale	Is the system manageable? If not, could it be more simple and take achievable steps towards an ideal goal?	If not manageable, start small and build towards to another design.
Biological resources	What plants, animals, or microbes are used to minimize outside energy input?	Worms help to crumble the soil so we don't need to dig the land.
Multiple elements	Does each essential element function in more than one way?	Fences are made from bamboo, nets, and plants to prevent animals entering.
Multiple functions	Is there more than one (at least three) uses for every element?	Border plants (moringa, turi, banana, jack fruit, mango, lamtoro, gamal, etc) can be used for pest control, shade, wind break, nitrogen source, animal fodder, vegetables, fruits, etc.
Natural succession	How does the design work with and support nature and natural systems?	Indicators of an organic garden are many worms and frogs, the plants are healthy, the soil is fertile.
Relative location	Are elements placed in a way that they benefit from each other?	Nursery near the garden, compost bin, and water. These elements benefit each other because seedlings will be planted in the garden and will need compost and water.
Personal responsibility	Does the design create benefit for others? Could it have negative impacts on other places/people?	The liquid compost needs to be near the garden, but the smell can bother other people, so we need to cover it.
Cooperation, not competition	How does the design create systems that help people to help each other?	Seed saving garden produces seeds and provides local seeds for the community.
See solutions, not problems	What problems has the design turned into solutions for addressing needs?	Garbage has become a problem everywhere but organic waste is a good solution if we make compost to fertilize our plants so we don't need to buy fertilizer.

Observation	How easy will it be to continue to observe each component of the design as it develops? Where will you be able to see from?	Everything will be easy if we use local resources to make every component in our design (easy to grow local seed and share the information with others).

Local relevance and replication checklist

- Is the component culturally appropriate in the area?
- Is it made from local, renewable, easily available resources?
- Is it designed to use local/renewable resources for production?
- Is the technology feasible to be used by the target groups?
- Are the parts easily available if something breaks?
- Is the design easy to be replicated by others?
- Is the cost appropriate for the target groups?
- Is the time taken to create the component appropriate?

Permaculture Ethics

How does your design or design component support Permaculture ethics?

1. **Care for the earth.**
2. **Care for the people.**
3. **Care for the future.**

The benefits of using these checklists

You will save a lot of time, energy and resources by taking the time BEFORE you implement your projects to:

- Consider and answer the questions in these four checklists.
- Adjust your plans and ideas to achieve maximum benefit.

Remember that Permaculture is about creating and using intelligent, well integrated designs which mirror, support, and work well with natural systems. These designs will:

- Create the most benefits, now and into the future for:
  - Ourselves.
  - Our children and their children.
  - Our community.
  - Our precious resources.
- They will also make your work much easier over time.

Notes...

Workshop evaluation - Participant feedback form

This form has been prepared so you can give us your feedback about the quality and effectiveness of the training workshops we offer and help us to improve the workshops on an ongoing basis. Providing your contact details will also help us to keep track of those who graduate from our courses so that we can contact you in the future about new training or program opportunities.

We appreciate you taking time to complete this evaluation form.

Workshop information

Course title :

Course dates :

Participant information

Full Name : Gender : M F

Children :
Include each child's age and school status

Hand phone : Home tel :

Other tel : Office tel :

E-mail :

Address :

Village :

City : Regency :

Occupation :

Organization :

Nationality :

How did you hear about this workshop ?

- Radio
- Newspaper
- Religious group
- Government
- Int'l NGO
- Local NGO
- Friend
- Other

Explain other (if NGO list name):

FACILITIES : Please evaluate and give suggestions about the following

	INADEQUATE	ADEQUATE	GOOD	EXCELLENT	NOT SURE	PLEASE GIVE ANY SUGGESTIONS :
Facilities :	☐	☐	☐	☐	☐	
Food :	☐	☐	☐	☐	☐	
Bathroom :	☐	☐	☐	☐	☐	
Site :	☐	☐	☐	☐	☐	

WORKSHOP CONTENTS : Please evaluate and give suggestions about the following

	INADEQUATE	ADEQUATE	GOOD	EXCELLENT	NOT SURE	PLEASE GIVE ANY SUGGESTIONS :
Training materials :	☐	☐	☐	☐	☐	
Tools/equipment :	☐	☐	☐	☐	☐	
Language :	☐	☐	☐	☐	☐	
Delivery rate :	☐	☐	☐	☐	☐	
Quality of info :	☐	☐	☐	☐	☐	
Relevance :	☐	☐	☐	☐	☐	

TRAINERS : Please evaluate and give suggestions about the following

	INADEQUATE	ADEQUATE	GOOD	EXCELLENT	NOT SURE	SUGGESTIONS :
_____ :	☐	☐	☐	☐	☐	
_____ :	☐	☐	☐	☐	☐	
_____ :	☐	☐	☐	☐	☐	
_____ :	☐	☐	☐	☐	☐	

Would you recommend this workshop to others? YES ☐ NO ☐ Explain why :

What did you like the LEAST from this workshop?

What did you like the MOST from this workshop?

How do you intend to use the knowledge you acquired during this training in your daily life and your organization's activities?

Any other comments you would like to make about the workshop :

Would you like to be contacted about future workshops? YES ☐ NO ☐

Are there particular workshops that you would be interested in?

Sustainable construction materials : ☐ Sustainable forestry : ☐

Soil rehabilitation : ☐ Household food security : ☐

Waste management : ☐ Appropriate technology : ☐

Integrated pest management : ☐ Seed saving and nurseries : ☐

Cooperatives / small enterprises : ☐ Wastewater treatment : ☐

Animal husbandry systems : ☐ Integrated aquaculture : ☐

Intensive Permaculture design : ☐ Permaculture for children : ☐

Permaculture training of trainers : ☐ Disaster preparedness : ☐

Other - describe :

Other - describe :

Other - describe :

Thank you very much for your participation!

The monitoring and evaluation booklet

This booklet has been designed to help document workshop/ program results. It is a quantitative monitoring and evaluation tool which is used both during a Permaculture workshop as well as at follow-up field visits.

It can help facilitators to self-evaluate at the time of trainings and then observe, monitor, and evaluate the results of their trainings during follow-up visits. It is also a useful tool for keeping your project supporters/donors up to date on the status of the project's activities.

The booklet is divided into three sections:

- **Section 1 - Participant information** - filled in at the time of the training(s).
- **Section 2 - Facilitator self-evaluation** - filled in at the time of the training(s).
- **Section 3 - Follow-up evaluation** - filled in during follow-up visits.

How to use the Permaculture project monitoring and evaluation booklet

The facilitator can start by filling in the information on the front cover of the booklet:

- **Project/workshop name and date.**
- **Project/workshop location.**
- **Names of key facilitators.**

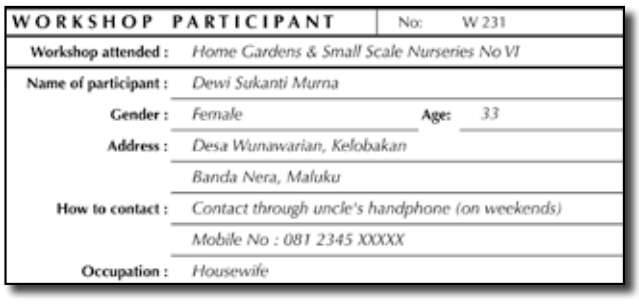
PART 1 - Participant information

This section provides detailed information on the workshop participants.

Filling in the participant information forms

For every workshop/program the facilitator should first fill in the workshop participant information - 1 for each participant. There are 30 of these forms in each booklet, which can be used to document the following information:

- **Participant no** - needed later for follow-up stage and data analysis.
- **Workshop attended** - for example Permaculture design course, Composting training, Appropriate technology solar cookers training, etc.
- **Participant details:**
  - Name of the participant.
  - Their gender.
  - Their age.
  - Address - for follow-up visits.
  - How to contact them.
  - Their current occupation.



WORKSHOP PARTICIPANT	No: W 231
Workshop attended :	Home Gardens & Small Scale Nurseries No VI
Name of participant :	Dewi Sukanti Murna
Gender :	Female Age: 33
Address :	Desa Wunawarian, Kelobakan
	Banda Nera, Maluku
How to contact :	Contact through uncle's handphone (on weekends)
	Mobile No : 081 2345 XXXXX
Occupation :	Housewife

PART 2 - Facilitator's workshop self-evaluation

This section of the project monitoring and evaluation booklet can be used by the facilitator to self-evaluate the relative success of the workshop activities. It is filled in at the time of the workshop/training.

Step 1 - Filling in the training activities and expected outcomes

There are 12 boxes provided which can be used for listing and self-evaluating up to 12 different topics or aspects of the training.

Before or during the workshop/training the facilitator should fill in:

- **The topics or aspects of the training activity** to be carried out, for example MOD 1 - **Creative thinking exercise** "Local ethics that support sustainability'.
- **The expected outcomes of this activity -** in the 'Permaculture Facilitators' Handbook' each exercise includes an objective (expected outcome).

Step 2 - Scoring the training activity results

At the time of delivering the topic the facilitator should score what they feel is the result of that activity using this numbering system:

- **Grade 1: CONFUSED** - Facilitator feels that the participants still seem confused following the activity.
- **Grade 2: NOT SURE -** Facilitator is not sure how well the activity went and whether or if the outcomes were achieved.
- **Grade 3: NO CHANGE** - Facilitator feels there has been no change in the participants in terms of the desired outcome.
- **Grade 4: INCREASED ABILITY/UNDERSTANDING** - Facilitator feels that participants' ability/understanding has increased as a result of the activity.
- **Grade 5: ABILITY/UNDERSTANDING INCREASED CONSIDERABLY** - Facilitator feels that participants' ability/understanding has increased considerably as a result of the activity.

FACILITATOR's WORKSHOP SELF EVALUATION

For each of the topics / aspects listed below, grade the extent of change from 1 - 5

1 = Confused, 2 = Not sure, 3 = No change, 4 = Increased Ability / Understanding, 5 = Increased considerably

No	Topic / aspect	Exp. Outcome	Grade	Explanation / reason
1	*Creative Thinking : Permaculture Principles Brainstorm*	*Participants understand principles by relating them to real examples*	*4*	*Participants gave appropriate examples and had an animated discussion about Multiple Elements*
2	*Creative Thinking : Community Waste Recycling & Disposal*	*Participants understand the benefits of recycling & waste management*	*1*	*Participants said they felt it was not their responsibility to deal with wastes*
3	*Creative Thinking : Managing & Storing Drinking Water*	*Participants identify local solutions to storing drinking water*	*2*	*Participants needed a lot of prompting to come up with ideas*

Remember...
This is not an evaluation of the facilitator's performance. It is a way to evaluate how the activities in the training were received by the workshop participants.

It is very important that the facilitator be honest when scoring.

Remember that your students are your best teachers.

Why is this scoring so important?

- Facilitators can evaluate the workshop and based on that evaluation they can improve the activities and techniques used so that workshops will be even better in the future.
- Facilitators can design new exercises that are more effective by monitoring which activities were easily understood and which activities were difficult for the workshop participants.
- Facilitators will be able to identify and note specific aspects of the training that may require extra attention in follow-up field visits.
- Facilitators may be surprised that a topic they thought didn't work well during the training was actually well adopted by the participants and vice versa. Keeping track of the scores during and after the workshop will help them to fine tune their evaluation skills.
- The facilitator can help to make the 'Permaculture Facilitator's Handbook' more useful by providing critical feedback about exercises that could be improved.

Step 3 - Totalling the scores of the training activity results

At the end of the training the facilitator should add up a total score for all of the activities conducted during the workshop.

This total workshop score is useful as it can later be compared to total scores for future workshops on the same topics, and the facilitator can see progress over time.

FACILITATOR's WORKSHOP SELF EVALUATION

No	Topic / aspect	Exp. Outcome	Grade	Explanation / reason
7	*Field Activity : Design a Garden System (Garden Ex. 1)*	*Participants develop the Garden System to be implemented*	*5*	*Participants came up with several creative ideas that added value to the desings*
8	*Field Activity : Mulching a Garden Bed*	*Participants practice mulching garden beds*	*1*	*After the field activity participants said that mulching seemed like too much work for the benefits! :(*
9	*Field Activity : Pest Control*	*Participants practice various methods for pest control*	*4*	*Participants had an animated discussion after the practice and all asked to take the repellant sprays home*
10	*Field Activity : Plant Seedlings (Garden Ex. 5)*	*Participants learn about and practice planting seedlings*	*1*	*Several participants treaded on the garden beds and crushed new seedlings during activity*
11	*Creative Thinking : What are GMOs?*	*Participants learn about how GMOs are made*	*5*	*Participants were very animated after this exercise and agreed to make a nursery for self-propagating species*
12	*Field Activity : Start a Nursery*	*Construct a community nursery*	*3*	*Participants said they were already satisfied with their own nursery system*
TOTAL GRADE WORKSHOP RESULT :				40

REMEMBER A higher grade does not necessarily mean more success. Often the real results of your training will be seen later when participants start practicing what they have learned in the field. An honest workshop evaluation will help you to make decisions that will improve your workshops.

Keep in mind that there are many factors that influence the results of a workshop including:

- Appropriateness of the topics.
- Participants' preexisting knowledge about the topics.
- Participants' interest in the topics.
- Quality of the exercises.
- Style of delivery.
- Techniques used for delivery.
- Facilitator's skills.
- Facilitator's experience.

PART 3 - Evaluation during follow-up visits

The project monitoring and evaluation booklet has a section designed specifically for field assessment during routine follow-up site visits. Use the same scoring system that was used to evaluate the workshop. This evaluation is conducted based on the facilitator's observations of results with up to 6 of the workshop participants.

Step 1 - Choose the participants who will participate in evaluation

The facilitator needs to visit participants involved in workshop at their homes or places where they are implementing the activities trained during the workshop.

Select up to 6 participants for the evaluation.

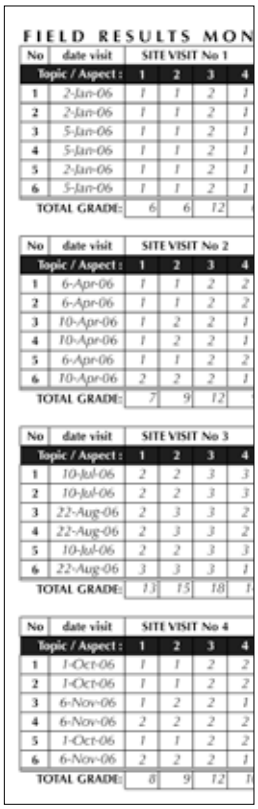
The 6 participants should be chosen randomly and as much as possible gender balance should be maintained - i.e. select an equal number of female and male participants to be involved in the follow-up evaluation.

PARTICIPANTS JOINING FIELD EVALUATION

No	Name of participant	Gender	Age	Location
1	*Dewi Sukanti*	*F*	*33*	*Desa Wunawarian, Kelobakan*
2	*Armansyah*	*F*	*21*	*Desa Wunawarian, Kelobakan*
3	*Desak Santi Widaya*	*F*	*45*	*Desa Wonokerto*
4	*Komang Nurbawa*	*M*	*23*	*Desa Wonokerto*
5	*Agus Samijaya*	*M*	*34*	*Desa Wunawarian, Kelobakan*
6	*Pieter Tambunan*	*M*	*21*	*Desa Wonokerto*

Remember...
Don't just choose participants you think are doing well after the training. In order to learn and become highly effective facilitators, we need to understand which aspects of the trainings work best for which types of people, and how we can make the trainings more effective for those who have difficulties implementing the activities.

Step 2 - Create a follow-up visit evaluation schedule



FIELD RESULTS MON

No	date visit	SITE VISIT No 1			
Topic / Aspect :		1	2	3	4
1	2-Jan-06	1	1	2	1
2	2-Jan-06	1	1	2	1
3	5-Jan-06	1	1	2	1
4	5-Jan-06	1	1	2	1
5	2-Jan-06	1	1	2	1
6	5-Jan-06	1	1	2	1
TOTAL GRADE:		6	6	12	

No	date visit	SITE VISIT No 2			
Topic / Aspect :		1	2	3	4
1	6-Apr-06	1	1	2	2
2	6-Apr-06	1	1	2	2
3	10-Apr-06	1	2	2	1
4	10-Apr-06	1	2	2	1
5	6-Apr-06	1	1	2	2
6	10-Apr-06	2	2	2	1
TOTAL GRADE:		7	9	12	

No	date visit	SITE VISIT No 3			
Topic / Aspect :		1	2	3	4
1	10-Jul-06	2	2	3	3
2	10-Jul-06	2	2	3	3
3	22-Aug-06	2	3	3	2
4	22-Aug-06	2	3	3	2
5	10-Jul-06	2	2	3	3
6	22-Aug-06	3	3	3	1
TOTAL GRADE:		13	15	18	

No	date visit	SITE VISIT No 4			
Topic / Aspect :		1	2	3	4
1	1-Oct-06	1	1	2	2
2	1-Oct-06	1	1	2	2
3	6-Nov-06	1	2	2	1
4	6-Nov-06	2	2	2	2
5	1-Oct-06	1	1	2	2
6	6-Nov-06	2	2	2	1
TOTAL GRADE:		8	9	12	

It is very important to measure impact over time. Especially for a Permaculture program which will take time to develop to its full potential. For this reason, at least quarterly follow-up visits - every 3 months during a period of 2 years - are recommended for on-site evaluations. This will allow you to monitor and evaluate the results during complete crop cycles and as the general environment starts to adjust to the project.

The project monitoring and evaluation booklet provide for up to 8 assessment visits. Of course, more can be undertaken if needed, simply copy the evaluation results onto another sheet of paper.

Evaluation schedules will depend on many things including:

- The length of the program.
- Appropriate times for visits.
- Donor requirements.
- Support needed to do the evaluation visits.

It is up to the facilitators and their managers to design and agree upon the field evaluation schedule.

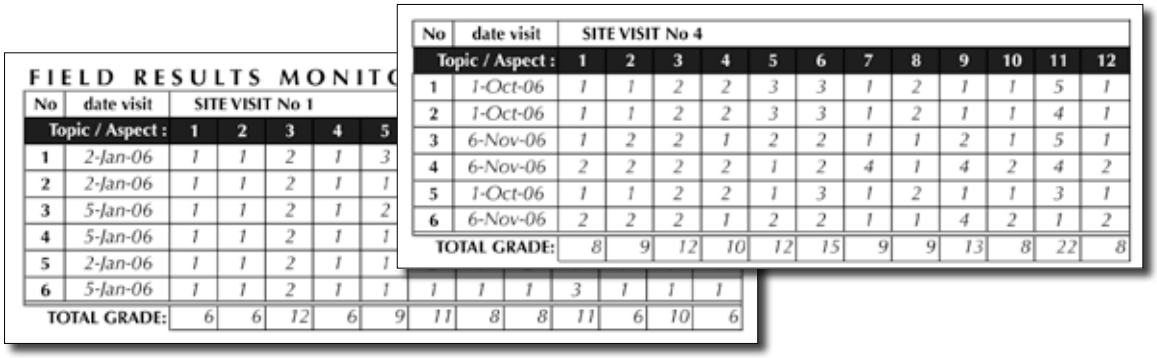
Step 3 - On-site evaluation during the follow-up visits

While at the participant's location evaluate the results for each of the activities (up to 12) included in the initial training. Grade the results using observations of what has happened and discussions with each of the 6 participants. **For example:**

- If the workshop activity no 1 was 'making compost' use the boxes under no 1 to evaluate the participants results in making compost.
- If the workshop activity no 2 was 'legumes and their uses' use the boxes under no 2 to evaluate whether the participants have planted new legumes and started using them.

A similar scoring system is used as was used earlier during the workshop:

- **Grade 1: NO RESULT -** Facilitator observes that the participants were not able to implement the activity at their location.
- **Grade 2: CONFUSED -** Facilitator observes that the participants still seem confused about how to implement the activity at their location.
- **Grade 3: INCREASED ABILITY/UNDERSTANDING -** Facilitator observes that participants' ability/understanding has increased.
- **Grade 4: ABILITY/UNDERSTANDING INCREASED CONSIDERABLY -** Facilitator observes that participants' ability/understanding has increased considerably.
- **Grade 5 : RESULTED IN NEW SELF INITIATED ACTIVITIES -** Facilitator observes that participants' have, of their own initiative, independently implemented new activities using the Permaculture principles.



FIELD RESULTS MONITO

No	date visit	SITE VISIT No 1				
Topic / Aspect :		1	2	3	4	5
1	2-Jan-06	1	1	2	1	3
2	2-Jan-06	1	1	2	1	1
3	5-Jan-06	1	1	2	1	2
4	5-Jan-06	1	1	2	1	1
5	2-Jan-06	1	1	2	1	1
6	5-Jan-06	1	1	2	1	1
TOTAL GRADE:		6	6	12	6	9

No	date visit	SITE VISIT No 4											
Topic / Aspect :		1	2	3	4	5	6	7	8	9	10	11	12
1	1-Oct-06	1	1	2	2	3	3	1	2	1	1	5	1
2	1-Oct-06	1	1	2	2	3	3	1	2	1	1	4	1
3	6-Nov-06	1	2	2	1	2	2	1	1	2	1	5	1
4	6-Nov-06	2	2	2	2	1	2	4	1	4	2	4	2
5	1-Oct-06	1	1	2	2	1	3	1	2	1	1	3	1
6	6-Nov-06	2	2	2	1	2	2	1	1	4	2	1	2
TOTAL GRADE:		8	9	12	10	12	15	9	9	13	8	22	8

Once you have visited all 6 of the participants involved in the evaluation and scored the results, the scores can be added together to get an average score, which can be used to:

- **Compare it to average scores of ongoing site visits -** monitor progress over time.
- **Compare it to the scores you gave yourself during the training** - You may be surprised by noting that a topic you thought didn't work well during the training was actually well adopted by the participants and vice versa.

This scoring card will help you to:

- Learn how long it takes for results to be visible in the field.
- Identify specific aspects of the training exercises that may need adjusting.
- Identify ways to help the participants with any challenges they are facing.

Note: You can make your own versions of these booklets, or to order copies of the booklet from IDEP contact: info@idepfoundation.org

Focus Group Discussions with participatory surveys

About Focus Group Discussions (FGD)

Focus group discussions are a great way to conduct a qualitative evaluation, which will help you to better understand the program's results from the perspective of the participants.

Participatory surveys can be adjusted to suit the type of evaluation you need. However, sometimes it can be difficult to facilitate effective FGDs.

These two challenges are frequently encountered:

- Some members of the FGD are dominant while others are shy and do not contribute to the discussion.
- A lot of time is spent discussing issues that have no relevance to the project - or in other words, the **focus** of the **focused group discussion** is lost.

One solution to overcoming these challenges is to use a 'participatory survey' as part of the FGD. By using a participatory survey you can ensure that:

- Each of the participants actively join the process.
- The discussions stay focused.

Preparations for a focus group discussion with participatory survey are:

- Enough large sheets of paper to write one survey question on one paper.
- Enough cards to that each participant has one card for each question.
- Enough markers so that everyone can write.

Step 1 - Prepare the Participatory Survey Questions

Prepare a range of key questions relating to the workshop or activity that was undertaken with the participants. The questions should connect to the objective of the activity/program (i.e. sustainability etc).

The questions you prepare will need to be 'open questions' – questions that can't be answered by yes or no. For example:

- **A question that is not open is:** 'Did you learn how to compost?'
- **An open question is:** 'What did you learn about composting?'

Prepared each of the questions you want to ask on paper large enough so that everyone involved in the FDG can read them easily.

For each of the questions there are five answers from worst-case to best-case scenario, something like on the following table.

Has your understanding about farming changed as a result of this project/training?

Decreased considerably	Decreased	Same	Increased	Increased considerably

The following are examples of general questions related to a standard Permaculture training. **Note: These examples are simply provided to help explain the process and it is important that the facilitator choose or design questions which match the training or activity that is being evaluated.**

- Has your understanding about farming changed as a result of this project/training?
- To what extent have ideas from the training helped you get more harvests from your garden/farm?
- Has your understanding about pollution changed because of this project/training?
- To what extent have you used waste management because of this project/training?
- Has your understanding about nutrition changed because of this project/training?
- To what extent have you started eating nutrient rich foods because of this project/training?
- To what extent has your understanding about Integrated Pest Management changed because of this project/training?
- Have you started using Integrated Pest Management techniques because of this project/training?
- Has your understanding about forestry management changed because of this project/training?
- Have you started practicing conservation because of this project/training?
- Has your family income changed because of this project/training?
- Have you started using appropriate technology because of this project/training?
- Has your understanding about cooperatives in your community changed because of this project/training?
- Has your community started using cooperatives as because of this project/training?

Step 2 - Form the group for the FGD

Ideally, when forming the group there should be:

- No more than 12 participants per group.
- Equals numbers of men and women.
- A mix of age groups.
- If more culturally appropriate, separate male and female focus groups can be formed.

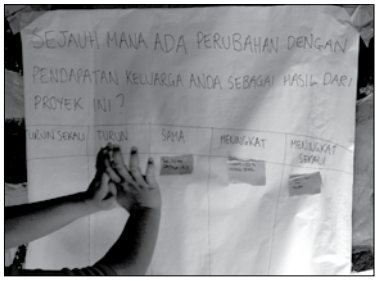
Step 3 - Conduct the participatory survey

Before beginning the FGD the facilitator should use the questions sheets formed in stage 1 to hold a participatory survey.

This will greatly increase the effectiveness of the FGD as it will:

- Act as an ice-breaker for the FGD process.
- Allow the facilitator to obtain personal information of the participants.
- Introduce the FGD topics to the participants.

Running a participatory survey:



1. Paste a big piece of paper with the key question and table in front of the participants.
2. For each question give each participant small pieces of cardboard or paper on which they write their name, age, and gender - for example if there are 5 questions, each participant should receive 5 pieces of cardboard or paper.
3. Each participant and pastes their cards onto the answer which best describes their situation.

Step 4 - Conduct the Focus Group Discussion

It is easier to conduct an effective FGD with two facilitators.

While one facilitator conducts the discussion with the FGD participants, the second facilitator writes up key points and issues from the discussion.

You can hold the discussion after the participants have made their selections on one of the questions, or participants can make their selections for all of the key questions, then start the discussions.

1. The answers on the key question sheets are very general - **the facilitator now asks the participants the reasons for their selections.**
2. You do not have to ask every participant to provide a reason for their selection. If many people have chosen the same answer, then ask a few in order to get sample responses. **This way the FGD will not take too much time.**
3. On the next key questions ask other participants for their answers to ensure that everyone takes part in the FGD.
4. **Try to ensure that the discussion does not take longer than 2 hours or the participants will be bored and lose concentration.**

Step 5 - Compile the data

- It is important to keep the results of the participatory survey and the focus group discussion for use in project reporting.
- The data collected can be used for a quantitative evaluation (see following sections about making effective reports).

Notes...

Most Significant Change (MSC) stories

This is a simple tool that will enable you to regularly monitor and evaluate the impact of your projects by asking the program beneficiaries to tell their stories about important changes in their lives or in their area that resulted from the program.

These stories are just like simple case studies.

- Community members and local stakeholders are asked to share what they think was most significant or important for them as a result of the project.
- They are also asked to explain why this was significant or important for them.

The stories can be:

- Individual stories describing the changes experienced by one person.
- Communal stories describing the changes experienced within a community.

The MSC Stories become a form of participatory monitoring and evaluation. The information gathered is qualitative data which will provide a picture of change **through the eyes of the program participants.**

After the stories are collected they are shared. Most importantly, the stories are shared with the community itself - community members should be able to read and discuss these stories.

Following is a guide to implementing the MSC monitoring and evaluation process. However, this is a general outline and extra training is recommended for best results.

Step 1 - Create a reporting time frame

You must first determine how often you will collect stories.

You will need to consider:

- How often you visit the communities involved in the Permaculture training.
- The time it will take to conduct interviews with program beneficiaries.
- The duration of your project.

Generally stories should be collected:

- Once a month.
- Once every two months.
- Once every three months.
- Or, once every six months.

The usual time frame is every three months. You can collect stories during routine site visits.

Step 2 - Decide who you will collect the MSC stories from

MSC stories should be collected from a selection of program beneficiaries. MSC stories can also be used to monitor and evaluate the wider impact of your project/program by creating stories from other local stakeholders.

You can evaluate whether:

- Program beneficiaries have shared Permaculture techniques with other community members.
- Other community members have adopted techniques after seeing the success of these techniques in practice.

Aside from direct program beneficiaries, MSC stories can be collected from:

- Indirect program beneficiaries.
- Other local stakeholders, such as community leaders, district government, etc.
- Facilitators and trainers.
- Program field workers.

Step 3 - Establish 'categories of change'

The MSC stories technique does not use indicators, instead it uses 'categories of change'.

These are broad areas of change based on the goals of your project. These categories are like sections in a newspaper – general news, international news, sports, finance, etc.

It is best to identify no more than 4 categories of change.

Examples of categories for a Permaculture project could include:

- Changes in skills as a result of the Permaculture project/training.
- Changes in overall family health as a result of using Permaculture techniques.
- Changes in understanding/behavior based on Permaculture techniques, e.g. practicing conservation, supporting diversity, energy cycles, planning, etc.
- Changes in family income.

These are just examples. Try to think about your training/project and the aspects of changes that you hope will occur as a result of the training and implementation of Permaculture techniques in the community.

Step 4 - Create a schedule for collecting the MSC Stories

Stories are most easily collected through one-on-one interviews.

When designing your schedule you need to work out how many stories can be collected during the reporting time frame. For example: If you collect stories over three months, try to interview at least six program beneficiaries (this is only 2 stories per month).

Make sure that you include on your schedule time for interviewing:

- Both men and women.
- Older and younger program participants.

Step 5 - Interview the participants (collect the MSC stories)

As mentioned earlier, the MSC stories are most easily collected through one-on-one interviews.

It is important to remember that the stories do not have to be long - in fact short, concise stories are best, but they need to be relevant to the topic and clearly explain how the project/training created significant changes.

1. Prepare enough copies of the following Most Significant Change Story Sheet (see following page) so that you have one sheet for each interview.
2. Visit the participants that are part of your MSC evaluation and explain:
    - **The objective of the MSC evaluation -** hearing from their own perspective how the project/activity has impacted their lives so that we can learn how to best conduct future programs. Sharing their experiences and perspectives so that others can learn from them.
    - **The process of creating the stories -** Those who wish to write their own stories may do so, those that are more comfortable being interviewed so that someone else can write the story can do so too. The final stories will be brought back to them for verification before being publicized.
    - **The process of sharing the stories -** Let the participants know that after verification, there will be a process of sharing their story with the rest of the community or with other communities involved in the project. You can tell them that their story will be similar to an article in a 'good news newspaper'. If you already know how you plan to conduct the socializing of the stories you can explain it at this time.
3. Once you have answered any questions the participant may have and they are comfortable with the process and ready to be involved in the interview, you can start the interviewing process.
4. Ensure that you get all of the relevant details of the participant properly documented for future reference. The following Most Significant Change Story Sheet can be used for this.
5. Use the Most Significant Change Story Sheet as a guideline for questions that will help to create the key points for a short story. The answers can be presented as:
    - Narrative answers written directly on the sheet.
    - Answers written directly on the sheet in the form of bullet points.
    - Verbal answers which the interviewer can document on the sheet.

Note: During the interview process remind the participant that the focus of their story should stay on the category of change that has been predetermined. For example "Changes in overall family health as a result of using Permaculture techniques."

Most Significant Change Story No:					
Story title :					
Story category :					
Location :					
Interview date :					
Participant/storyteller details					
Name :					
Gender :		Age :			
Address	Village :				
	District :				
	Regency :				
	Province :				
Family	Married :		Single :		
	No and ages of Children :				
Participant's current occupation :					
Project/training they participated in	What is was :				
	When it happened :				
Interviewer details					
Name :					
Gender :		Age :			
Position :					
Interview					
What is the important or significant change you have experienced as a result of this project/training?					
How did this change happen? Explain the situation now compared to the situation before.					

In your opinion why and how did this change occur?
Who or what helped or encouraged this change?
Where did the change happen? When did the change happen?
In your opinion, why is this particular change important or significant?
What evidence do you have that indicates that this change is important for you? As a result of this change how different is your life now or how have your future hopes changed?

Step 6 - Writing the MSC story

This is often the most difficult part. Many people are afraid of using the MSC technique because they believe they are 'not smart enough to write a story' or they think that the story has to be long and complex. This is not so. The story can simply be a series of bullet points.

The Most Significant Change Story Sheet should provide all the relevant information needed for creating a MSC story. If needed the MSC interviewer can expand on the points provided to create a story. The story does not have to be long - in fact short, concise stories are best, but they need to be relevant to the topic and clearly explain how the project/training created significant changes. **It should be possible to tell a story in five short paragraphs.**

Use the following checklist to ensure that the story is indeed a Most Significant Change Story.

Most Significant Change Story - Checklist	**Yes**	**No**
Can you answer these questions with information from the MSC story?		
1. What is the significant change(s)?		
2. Where did the change happen?		
3. When did the change happen?		
4. Who was affected by the change?		
5. Why is this change important?		
6. How has this change improved the person's life?		
7. Is there enough information to create a MSC story?		

The writer can choose from the following two methods for writing the MSC stories:

- **Reportage** - Stories written in the second person, similar to a newspaper article.
- **Narration** - Stories written in the first person in the form of a dialogue.

Training may be useful to improve simple writing techniques.

Step 7 - Verification & feedback on the MSC Story

The most important part of this process is to share the information gathered in the stories with community members. **This way the technique is not only a monitoring and evaluation tool, but an important way to motivate the community by providing and sharing examples of success and change.**

Verification

If you have conducted an interview with a program beneficiary and written out bullet points or a short story about the most important change they have experienced you need to go back to the same beneficiary and read the story back to them.

Reading the story back to the participants will provide:

1. A chance for the information to be verified.
2. An opportunity for the participant to add more relevant information once they hear the story.

The facilitator/interviewer should also take this opportunity to ensure that:

- They have the full name of the MSC story contributor.
- They have checked the spelling.
- Note: The story contributor may choose to use an alias.

Feedback to the community

After verification, you can share the story with the rest of the community or with other communities involved in the project. This can be done in many ways and you should always consider issues of illiteracy and come up with clever ideas to share the stories with as wide an audience as possible.

Some ideas include:

- Post the story on community notice boards or in a central meeting place where many different people can read the stories.
- If you hold meetings with the project participants, start the meetings by reading out some MSC stories and encourage community members to comment on the stories. Note: This is also a good way to generate new stories from the community.
- Is there a community radio network in your program area? If so, organize to read some of the stories on this radio network.
- **Note:** Stories may be translated into local dialects.

Step 8 - Quantifiable evaluation of MSC stories

MSC stories can be further analyzed to provide quantifiable Data by documenting and analyzing the data provided by a set of MSC stories. Then this data can be used in project/program reporting (as well as the stories themselves).

Read further in this chapter for more information about data analysis and reporting.

Some of the things that can be measured include:

- The number of stories per 'Significant Change Category'.
- The number of stories written by women.
- The number of stories written by men.
- Social status of the story teller (poor, middle class, rich).
- Age range of the story tellers.

Through this type of analysis you will be able to identify the most common significant changes being identified by the program beneficiaries themselves.

Most Significant Change story examples

MSC story example 1 "Ibu Lisa expresses herself"

Ibu Lisa experienced many significant changes as a result of the Yayasan PODO Program. The most significant change she experienced was her ability to speak her mind freely in her village.

Ibu Lisa is a housewife in Molari, Wayanesa, West Timbu. She is 38 years old and has 3 children, 1 daughter and 2 sons. In May 2005 Ibu Lisa joined the Small Enterprise Development Program that was facilitated by Yayasan PODO.

The Small Enterprise Development Program aim was to help increase the income of poor families in the area. The program included several initiatives such as the supply of farming tools and goats, training in organic farming, and the development of a traditional weaving cooperative. The program participants were mainly women and all of the women involved were asked to participate in the planning and implementation processes of the program.

Ibu Lisa explained that at the beginning of the program, when she joined community meetings during the planning stages, she felt very nervous sitting next to people that she didn't know.

"I had never been to a meeting before. I thought that these kinds of meetings were men's work and women weren't supposed to have these kinds of opinions," said Ibu Lisa. *"A woman's role was in the kitchen cooking for visitors. I felt really nervous the first time I was asked to talk, I wasn't able to say anything!"*

In time Ibu Lisa felt more confident to speak and eventually she became the Leader of the Traditional Weaving Group that was part of the program. These days many people hear Ibu Lisa's opinions. She said that this new ability to speak up was not only a change that she herself experienced but a change that she saw in many of the women in her community.

"Before this program happened, women were expected to stay quiet. Decision making was done by men only" said Ibu Lisa. *"But nowadays this has changed. Women can be involved in decision making and their opinions are given equal value to those of the men."*

Ibu Lisa also said that she invited many women to participate in the planning meetings so that they could make choices about the trainings they wished to have. What the women chose together was weaving. As well as joining this weaving training, Ibu Lisa also joined an organic farming training together with her husband.

Ibu Lisa said that she now has new skills and she feels more able to help with the financial needs of her family. With the income from selling her weaving, her family's income has increased by 30%. She is now able to send all of her children to school. Ibu Lisa's wish is to be able to support her children all the way through college. She especially hopes that this will be possible for her daughter.

"My hope is that the women in my community will continue to work together and develop new skills, and that my daughter will have more opportunities than I did".

MSC story example 2 "A kitchen garden brings health and vitality"

Mustlane village that was devastated by the Tsunami in December 2004. Before the tsunami most of the community members were fisher folk. One of these people is Ibu Laksini who used to work with her husband drying the fish that he caught and selling them at the local market. Ibu Laksini's husband died during the tsunami leaving her with 4 children to take care of on her own.

These days Ibu Laksini is able to ensure that her children have good nutrition from a kitchen garden that she has made next to her new house. She also has some chickens that supply her family with eggs and meat. Ibu Laksini is 43 years old and has 4 children, 3 daughters and 1 small son.

Ibu Laksini says that this significant change has happened since she joined the Good Nutrition through Kitchen Gardens Program which was facilitated by Yayasan BITAMA. Ibu Laksini joined the program in July 2005. The Good Nutrition through Kitchen Gardens Program included a training about good nutrition and how to make and maintain kitchen gardens and small nurseries. It also supplied the training graduates with organic seeds, seedlings, root stock, and chicks.

Before Ibu Laksini joined the program she and her children were only eating the food that was given out a the local refugee camp and some fish that Ibu Laksini bought at the market once a week using the money she made from a cash-for-work programs. Her children didn't have much energy and stayed inside most of the time. They were also often sick and getting infections.

"From my kitchen garden I get many different kinds of healthy organic vegetables, herbs, and roots everyday that I use for cooking food for my children," said Ibu Laksini *"I also use some of the roots and herbs to make medicine."*

"Before I joined the nutrition training I didn't know how important different kinds of vegetables with lots of vitamins were for keeping my kids healthy," she said *"now my kids have much more energy and vitality and they eat much more than they used to."*

Ibu Laksini said that she was now able to use the small amount of money that she had to buy meat and tofu and that she got all of the vegetables, herbs, and eggs she needed straight from her own garden system.

She also said that she and her children really enjoyed tending the garden each day and that many of her neighbors were impressed with how many different things she was able to grow and how big and healthy the plants were.

Ibu Laksini is helping some of her neighbors to start their own kitchen gardens and sharing seed stock and cuttings from her plants with them. She is very grateful that her children's health is better now that they are getting good nutrition every day.

"I was very worried about my children. They were always getting sick and had many sores on their legs. Now they are much healthier and by simply maintaining my garden, I am able to ensure that they stay healthy."

MSC story example 3 "A bamboo weaver increases his income through creative designs"

Most people from Metawae village are bamboo weavers. One of these people is Mr. Daluan who has been a bamboo weaver all his life.

Mr. Daluan is responsible for the life of his family. These days he can afford to put all of his children through school and still has enough income to support his family's basic needs. He is 51 years old and has 4 children, 3 sons and 1 daughter. All of his children are now in school, 1 in High School, 2 in Secondary School, and 1 in Primary School.

Mr. Daluan says that this significant change happened thanks to The Small Bamboo Enterprises Program which was facilitated by YASUPALU. Mr. Daluan joined the program in May 2005. The Small Bamboo Enterprises Program offered small enterprise loans for local bamboo weavers, as well as product production and marketing training.

Before Mr. Daluan received a loan from the Small Bamboo Enterprises Program he only had minimal funds that he could use for his work. He was able to afford 40-60 bamboo poles per week, which was enough to make 4-5 sheets of plain *gedeg* bamboo weaving. He could sell the plain *gedeg* for Rp. 5,000 each, so his weekly income was only Rp. 20,000 to Rp. 25,000 per week.

With the loan Mr. Daluan was able to buy 100 bamboo poles. He also joined a bamboo weaving design training. After the training he was able to dye bamboo and add new motifs in the weaving. With 100 bamboo poles Mr. Daluan was able to make 10 special motif *gedeg* weavings that he could sell at a much better price of Rp. 25,000 each. With these improvements, his income increased to about Rp. 250,000 per week.

"With the profit I made from the new weavings I was finally able to save some money. I could use this money for my children's education and I was able to buy iron for fixing the roof on my house, while still supporting my family's needs" said Mr. Daluan. *"Before this time I wasn't able to afford my children's schooling, or even cover my family's daily needs, I just didn't have enough."*

Mr. Daluan also said that women's involvement in the program had been very beneficial. Many women joined the planning meetings for the program and gave useful inputs and suggestions. An example of this was a woman from his village who went to Jogya to learn the bamboo dying and motif weaving techniques. She was the one that taught him and the other participants how to make the new weavings which helped to increase his income so dramatically.

He has also joined a community cooperative that is now working together to plant and propagate new kinds of bamboo so that they can make new designs and products in the future using their own bamboo.

Mr. Daluan is very grateful that he is now able to supply his family with their needs and also to support the education of his children.

"I am very proud that my children will now all be able to complete high school and that someday they will be able to get good jobs. Knowing this makes my life fulfilled".

Creating effective reports

About effective reports

Reporting is a key component of almost every project or program. This is the project team's opportunity to self-reflect and share with others: what they have done, how they did it, what they have learned, and finally what the project/program has managed to achieve towards the project's mission.

Reports are generally made to be read by other people. By keeping in mind a few key points, you can make your reports much more effective and easy to understand and digest what it is you want people to know.

Effective reports are:

- **Informative -** contain clear information that helps the reader to really understand the true results (impacts) of the project. The report should also clearly explain what the problem/situation that was addressed by the project was and how the problem was addressed by the project/program.
- **To the point** - often reports are much too long and contain lots of background information that does not necessarily relate to the project or that is not necessary for the reader to know. This can be frustrating to the reader. The reader just wants to know what the results of the project were and what methods were used to get those results.
- **Justifiable** - the information that is used in the report must be true and the methods used to compile and generate that information should be clearly explained. The methods used for compiling project impacts/results should also be ones that can be checked later. Usually this is done by compiling and analyzing data about the activities conducted and the results of those activities (see following section for more details on compiling and analyzing data).
- **Interesting -** you can make your report much more interesting to the reader by including photographs which show how the project was done and 'personal interest stories' - i.e. stories about or by the people that were directly involved in the project and how the project impacted their lives.
- **Understandable -** sometimes it is hard for people who are not in the field to understand what it is really like.
- **Appropriate -** when a donor supports a program/project an agreement is usually made beforehand about what their support will be used for. This can be in the form of a budget, MOU (contract), or even sometimes a verbal agreement. The report that is made needs to clearly explain how you used their support to achieve the agreed goals. If challenges were faced in achieving the agreed goals they should also be clearly explained.

  Note: If challenges in achieving agreed goals are being faced once a project starts you should contact your supporter right away, explain what is happening, and work together to find the best solution to amend the agreement. Otherwise the supporter may ask for their support to be returned to them and chances are they will not agree to support your work in the future.

Compiling and analyzing data

The results of your monitoring and evaluation should supply important data which you can use for creating effective reports.

This is why it is so important that you document the results of all of your evaluations and keep copies of these results.

With qualitative evaluation methods such as participatory survey, focused group discussions, and most significant change stories you can analyze and summarize the results of the evaluations to generate quantitative data which is easier and quicker to read in a report. For example:

Convert the results of a participatory survey or focused group discussion into data for reporting:

1. Document the names and other personal information written on the cards - these may be useful as an attachment to your report and if you plan to follow-up with the participants.
2. Note how many of the participants answered "decreased" or "same" etc. to a particular question.
3. For one set of answers like "decreased" note how many of them where women.
4. For a group of women who answered "decreased" note how many of them were under or over 30 years of age.
5. You may choose to present the data in a table to make it easier to read. See Table 1 below for an example of how this could look. **This is the data that explains, from the participant's perspective, what the impact of the activity was.**

You may choose to further analyze the data by calculating the percentages of various results - this makes it even easier to understand the impacts of an activity, especially if your project involves a lot of different people.

How to generate percentages: Divide the data from one of the results in Table 1 by the total number of participants in the activity - see Table 2 for an example.

Data for a report could look something like this:

Changes in understanding about farming as a result of this project/training

Workshop: PDC XIII	Decreased considerably		Decreased		Same		Increased		Increased considerably	
Gender :	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Under 30 years:			1		1		4	4	2	2
Over 30 years:				2		2	5	2	3	5

Table 1.

Total participants: 33 people

Under 30 years:			3.3 %		3.3 %		13.3 %	13.3 %	6.7 %	6.7 %
Over 30 years:				6.7 %		6.7 %	16.7 %	6.7 %	10 %	16.7 %

Table 2.

Qualifying the data on a report

The results of a focused group discussion can then be used to explain the reasons behind this statistical data, for example:

- 3 participants who are farmers increased their income from Rp. 3,000,000 per month to Rp. 15,000,000 by integrating an aquaculture system into their farm.
- Productivity on farms increased by 60% after using mulch, compost, and liquid fertilizer.
- 2 hectares of unproductive land was converted into fruit orchards.
- 2 small scale nurseries were established which are now working together to do seed exchanges.

Most significant change stories can also be a good attachment to a report.

They will help the reader to:

- Understand the results of the activities undertaken.
- Gain a better understanding of the project participants.

About using photographs or videos for reports

Appropriate photographs are one of the most effective ways of "proving" the results of a project's activities. People say that:

"A picture says a thousand words."

Images also add a lot of interest to a report. Through images, the reader can get a much stronger "feeling" about the general environment where the activities were undertaken.

When using photos or images in a report it is important to remember to select the photos which explain the project's impacts clearly. These could be photos that:

- **Show "before" and "after" images -** what the area looked like before the project was implemented and what it looked like afterwards (what changed).
- **Prove the results -** for example if your project explains that "2 hectares of unproductive land was converted into fruit orchards" take photos of the land before it was planted, then the fruit orchards and participants selling the fruits to show results.
- **Document steps in a process -** for example if your project included building a workshop for a local cooperative, you can show the steps undertaken to achieve this, i.e. building the workshop area, installing the equipment, the cooperative members working in the workshop area, and the trade or sales that resulted
- **Show how the sponsor's money was used -** if a sponsor gave you money to build composting units, a photo of the units being made is good way to make them understand what was done and "feel good" about the results.

Using visuals - Photos and video

Some tips for taking effective photos

Be prepared before taking the photo

- Imagine the shot before you take it. Remember that what you see with your eyes will look different on a simple 2 dimensional photo.
- Be clear in your mind – what kind of photo it is you want and what story do you want it to tell.

For example these photos both show a Permaculture training:

A difficult to understand training photo

An easy to understand training photo

Identify and focus on the subject of your photo

- Keep subjects simple - cluttered shots (with too many different things in one image) can confuse people about what you are trying to show.
- Make sure there is nothing too distracting in the background.

A hard to see photo of produce

An easy to see photo of produce

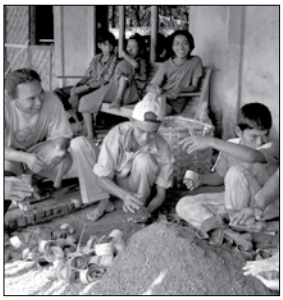
Where appropriate photograph subjects against a plain background – you can even make a backdrop using a sheet, wall, etc.

- It is often impossible to capture all of the aspects of your work in one single image - think about taking a series of photos which illustrate the steps or various aspects of the subject.
- Unless you need a general overview shot – it is better to focus on individual elements of a project.

Step 1. Seedling potting

Step 2. Seedling potting

Step 3. Seedling potting



Step 4. Seedling potting

Documenting the progress or stages of an activity

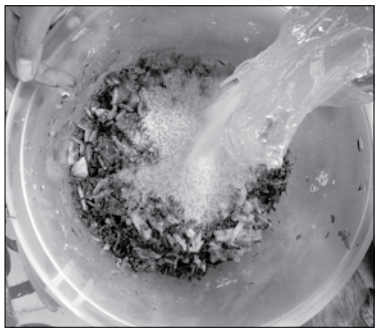
- To clearly explain an activity and its processes you may need to take photos at several stages. This can include before the activity starts, the steps of implementing the activity, and the result once the activity is done.
- 'Before' photos show the impacts of your activity. Photograph the site before any work if done. For example, if you are photographing the transformation of a plot of land, capture the problem – what is wrong in the area that the activity will address? This will help you to explain the transition and progress of your work.
- If it's a 'before and after' series – try to capture a 'like for like' pair of shots, i.e. take the 'after' shot from the same angle, position, and include the same area as the 'before' shot. This will make the change easier to see and understand.
- Remember, this is your opportunity to express how successful your project has been (or otherwise).

"Before and after" photos show a yard that was full of litter, cleaned by children and then used as a play area

- If you are documenting a method of constructing or making something, get individual shots of the raw materials before they are used and each step of the process.
- Try to document each key stage of work – usually you will only get one chance to do this so be ready to take the photos when the work is happening.

Step 1 - making Bio X

Step 2 - making Bio X



Step 3 - making Bio X

- You may even need to stop work briefly to take the photos or ask people to move themselves out of the shot if they are not needed to show the process, or even repeat actions (see below 'mocking up' section).
- For 'after' or 'results' pictures – wait until all the work is complete, i.e. the plants are bedded in and landscaping is finished. Clear away any clutter, litter, tools, or people that you do not want in the picture before taking the shot.

Considerations about lighting

Lighting is a common mistake in taking photos. Most lighting mistakes can be easily avoided. The main rule is: The brighter the light, the deeper and darker the shadows will be. **Think of the light source (where is it coming from).** What effect does it have on your image? (See the Lighting section in this book for further explanation).

IMPORTANT - Do not let the subject:

- Stand directly overlooking the sun.
- Stand overlooking a very bright light.
- Have their back to the sun or a strong light sources.

This will create an image that is over exposed (too much light), under exposed (lack of light), or blurred, with unintentional rough light, glared subjects, silhouettes, or shadows.

Lack of light, no flash

Too much light

Strong background light

- Try to avoid 'red eye' and 'too white' by making sure that your flash is not too strong or too close to the face of the subject you are photographing.
- If there isn't enough natural light, use flash to brighten the shot, or use a tripod to avoid blurry photos due to camera shake.
- Use flash to avoid dark shadows, even outdoors in bright lighting. This can improve the quality of a photo drastically.
- Cloudy weather or shady locations will provide a softer light with better color tones and cleaner images.
- Morning or afternoon light is usually soft and the best light for taking photos.

Good afternoon light

Good morning light

Nice light effect in semi-shade

Note: With digital photos, it is often better to be a little over exposed (more light) rather than under exposed. **With editing programs on the computer, you cannot add light that does not exist, but you can slightly reduce the bright light.**

Considerations about composition

Angles and positioning for taking photos

- Position yourself as close as possible to the subject and do not be afraid to experiment with your position. You can kneel or crouch equivalent to the height of the subject, lie down under it, or stand on it.
- If available, use the zoom or macro function on the camera to show the details of a subject.
- Ideally, your subject should be positioned in the middle of the frame with empty space around. This will easily allow you to crop the image later.
- Choose landscape (horizontal) or portrait (vertical) photos that is most suitable form to your subject.

Photo shot from above

Shot from below

A full frame showing the teacher & students

Photographing people

Photographing people well can be difficult. People can either add an interesting element to a photo, or actually disturb a photo if used incorrectly. People in photos can:

People in photos can:

- **Explain techniques –** show people doing activities.
- **Give a sense of size and area of work –** for example, a hand can show how big the size of tomatoes are or many people can show haw many people participated in a training.
- **Add a personal feeling to photos –** if people are happy or inspired, their expressions in the photos could show this.
- **Explaining the context or environment –** show the types of people involved in an activity.

A person showing size of produce

Avoid objects or people that interfere with the background of your photo

You only want things growing in the right place – and not seemingly, out of someone's head ☺.

Be aware of what is behind and in front of the object you are photographing.

Example of an un-useable image because a tree is blocking subject

Use hands are a very useful area to focus on/zoom in on.

- Showing hands can be an effective way to introduce a human element without it being too distracting
- Hands can give an aspect of scale and technique used
- Note: another common method of demonstrating scale is to place an object like a trowel or ruler next to the subject

A seedling represents new growth

"Planting begins"

Clear foreground, blurred background

Reconstructing scenes before taking the photo

Hard to understand shot of garden work

Try to capture images when people are working. They will look more natural, relaxed, and 'original'.

However, this is not always easy, especially if you are going to disturb people who are working or you yourself are one of the workers.

Reconstructed shot of garden work

Another option is to recreate the activity that you want to document. When you recreate a scene, you can easily control the situation and ensure that all the elements you need are in the photo.

Wait until the time or the proper stage of work and ask people to pose according to the photo you want to take.

About photo captioning

Record the details of your photos as soon as possible, before you forget important information about the photos. Record as much information as possible, such as:

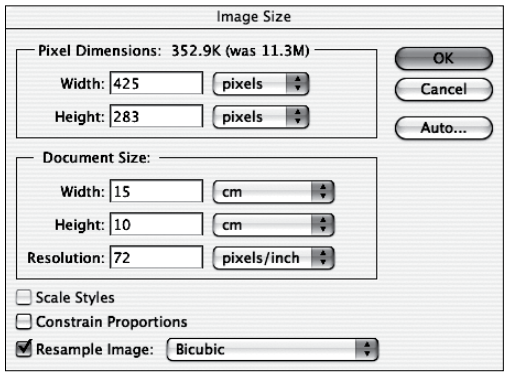
- **Who –** Who is the subject of the photo?
- **Event (what) –** What is the photo about?
- **When –** The date the photos were taken and the process of steps shown.
- **Location –** Where was the photo taken?
- **Why –** Why did this activity occur? What was the purpose?
- **How –** How does the process work?
- **Credit –** Include your name as the photographer.

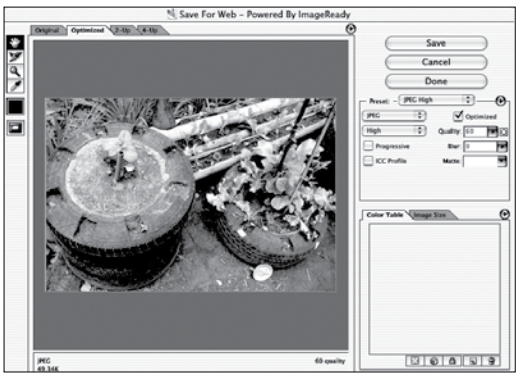
Choosing the best quality photos

- Choose the best photos and the ones that show the story you want to convey.
- Think about what your photo will be used for?
- Try to use the best film or digital files with the highest resolution. Do not take photos in low resolution just to save space on your memory card, because the recorded image will be low resolution.
- The size of digital photos can be reduced if you want to use them for a website or send them via e-mail.

The basic steps to save photos for e-mail or website

- Open the photo in Adobe Photoshop and open the menu: *Image> Image Size.*
- Type in the desired size. For example, height 10cm and width 15cm, and set the resolution to 72 dpi (pixels/inch), then click **[OK].**
- Go to the menu: *File> Save for Web.* This will open the image in a new window, like the example below.





- From the 'Preset' menu choose JPEG format, then click **[SAVE].**

Your photo is ready to be sent via e-mail.

Using photos to enhance most significant change stories

Images always help to explain a story. This is why photographs are used in newspaper articles. **Photographs can help to make a story more interesting and help people feel what it is like to be "inside" the story.**

The most significant change evaluation system described earlier in this chapter can be greatly enhanced through the use of photographs. To do this, either the interviewer or the MSC participant can use photos to explain or represent the changes described in the MSC stories.

A big advantage of using photographs is that they can help to improve the feedback process. For example:

- Photos taken by participants can help to focus the topic of the MSC story.
- MSC stories posted on a community notice board together with photographs will make other members of the community more interested in reading the story.

Photos taken by interviewers

Interviewers may choose take photographs to help to explain the most significant change stories they have collected.

Photos taken by participants

Project participant shows his buffalo

Trainee's new home gardens

Photography can also be a good opportunity for program beneficiaries to express themselves.

With simple instructions on how to use a camera and a basic training on photography techniques, program beneficiaries can collect important documentation of the changes that are being experienced either as individuals or in their community.

Program beneficiaries are asked to express through photography what they think represents the significant change experienced. The resulting photographs then become tools through which the MSC stories will emerge.

This "visual monitoring and evaluation" is both participatory and subjective. This means that it involves everyone in the process while helping to tell the story from the perspective of the participants.

The steps for "visual Most Significant Change (MSC)"

1. Select the "Visual MSC program participants (photographers) - remember to maintain gender balance.
2. Train the selected photographers in:
   - How to use the camera.
   - Basic photography techniques.
3. Establish and agree upon a specific time period for the selected participants to take their photographs (could be 2 weeks, 1 month, 3 months, 6 months, etc).
4. After the agreed upon time period, collect the films of the photos taken and print the results (if using standard film cameras) or collect the camera memory cards (if using digital cameras) and make prints or digital copies of the digital images.
5. Hold a focus group discussion with the participants using the printed photos or by displaying the digital images. Ask the participants to choose the photographs they think represent the most significant or important changes experienced as a result of the program.
6. Using these selected photographs as a tool, ask the participants to explain:
   - Why they took the photos.
   - What the photos represent.
   - What changes are represented in the photos.
   - Why those changes are significant or important.
7. As a result of this process you will have a significant change story emerging from the chosen photographs.
8. The photographs and story can then be:
   - Posted on a community notice boards.
   - Shared with the community through a simple publication.
   - The photographs shown and the stories read at community meetings.
   - A series of photographs and stories can also be compiled for a village-based exhibition.

This process provides an opportunity for participatory reporting of significant change, which falls outside of the established program goals, outcomes, and indicators.

Example of a MSC photo story

- A man took a photograph of his daughter's wedding. During a focus group discussion he choose this photo to represent the most significant change for him.
- **The facilitator was confused because the photo just looks like a normal wedding photograph.**
- During discussion with the program participant the story emerges… Before the program the man's daughter could not get married because he did not have enough money. But as a result of the Permaculture program, crop diversification opened up new markets for him and his overall family income increased by 30%. Because of this he could afford to organize his daughter's wedding and that, for him, represented a significant change.

Digital photos used as part of a training

Video interviews for MSC stories

A note about using video for reporting

As with photographs, videos can be a great way to add interest to a report. People say that:

> **"If a picture says a thousand words, than a video says a million"**

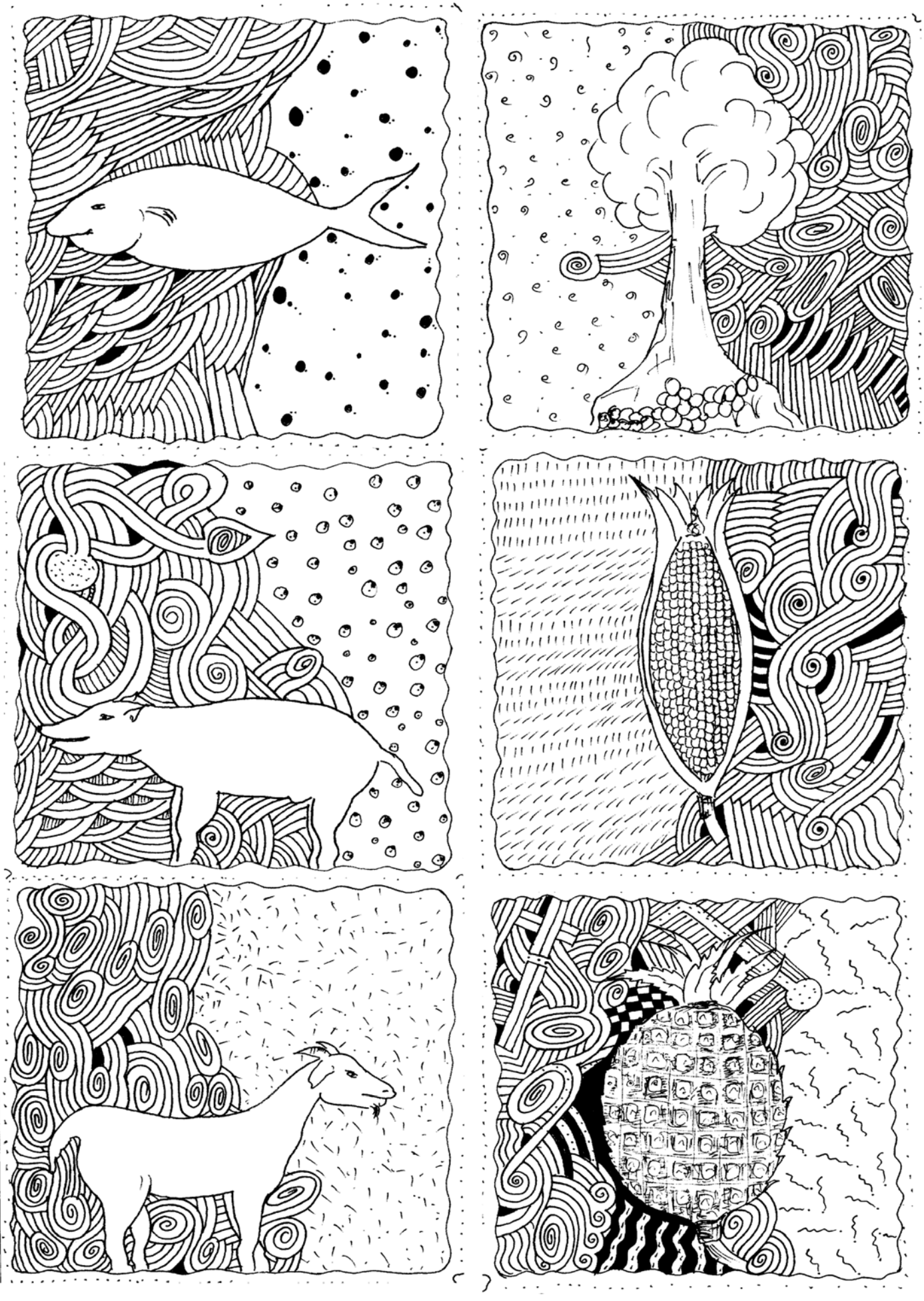
Videos can add dimensions to your visual reports, for example, participants can be interviewed so people can hear their most significant change stories told in their own words.

However, making an effective video is not easy. It is a very big undertaking and the process of doing so requires time, a range of skills, as well as expensive equipment.

Video planning, shooting, and editing training is recommended.

If you have video equipment and you are still learning how to use it effectively, one good idea is to practice using the equipment by filming yourself delivering trainings and then view the video with a group of friends and associates to self-evaluate what you could do to improve your facilitation skills.

Notes...



About this book....

About IDEP Foundation

THE ORGANIZATION THAT DEVELOPED THIS BOOK

IDEP Foundation is a local Indonesian NGO, which specializes in the development and dissemination of curriculum media, and practical programs that educate and empower local communities in sustainable development and disaster management. To see samples of IDEP publications, visit: www.idepfoundation.org

Since 1998 IDEP has been delivering Permaculture Training Courses for NGOs and communities from throughout Indonesia. The organization has two Permaculture Field Schools, one in central Bali and another in Aceh, which are teaching sustainable development as well as disaster recovery using Permaculture techniques. For examples of IDEP Permaculture training activities, see: www.idepfoundation.org

About the Companion Facilitator's Handbook

This Resources Book is designed to work in conjunction with the "Permaculture Facilitator's Handbook," which has been developed to provide a wide range of practical and comprehensive guidelines, tools, and techniques for delivering effective Permaculture workshops. It includes over 200 presentations, creative thinking exercises, and practical hands-on exercises, which can be used by local facilitators to design and implement effective courses appropriate to the needs in their area.

About the Companion Permaculture Resource Book

"The Resource Book for Permaculture - Solutions for Sustainable Lifestyles" uses simple language and many detailed illustrations to ensure that the information contained is accessible to all those interested. The original version of the Resource Book was developed by PERMATIL (Permaculture Timor Lorosa'e), an East Timorese NGO that works towards sustainable development in Timor Leste, through education, advocacy, demonstrations, and partnerships with local Government, NGOs, and community groups.

www.idepfoundation.org

Facilitator's Resource Book

~ for Permaculture ~

TRAINING AND ASSESSMENT

Tools for creative workshops and project follow-up

THE AIM OF THIS BOOK IS: To provide facilitators with useful tools to create dynamic workshops and learning environments. By using these creative facilitation techniques, learning activities can be maximized and workshops will be well received and remembered as enjoyable learning experiences. This Permaculture Facilitator's Resource Book also includes background information and tools for ensuring that program follow up, monitoring, and evaluation is conducted in a way that effectively involves the key stakeholder and participating communities. It also includes over 30 informative 'handouts', which can easily be photocopied by local facilitators for distribution to project participants as workshop support materials. This Permaculture facilitator's Resources Book has been designed to work in conjunction with the companion books 'A Resource Book for Permaculture - Solutions for Sustainable Lifestyles' and 'The Permaculture Facilitator's Handbook'.

This Book is an appropriate reference and guide book for use by community cooperatives and sustainable development facilitators, Indonesian Community Groups, NGOs, farmers' networks, Government workers, universities, and other organizations.

THIS BOOK INCLUDES TOOLS FOR WORKSHOPS AND FOLLOW-UP:

Creative facilitation techniques:

- Icebreakers.
- Energizers.
- Forming groups.
- Dynamic lead-ins.
- Dynamic reviews.
- Brainstorms.

Public awareness handouts:

- Permaculture.
- Waste management.
- Composting.
- Seed saving and GMO.
- Gardening.
- Nutrition.

Monitoring and Evaluation tools:

- Design check lists.
- MONEV booklet.
- Focus group discussions.
- Participatory surveys.
- Most significant change.
- Creating effective reports

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