The « Dai Prek Game » (Local level): « How to implement guide »

The game has been designed to be played with 5 players/farmers but can be played with up to 6 or 7 players/farmers if more people are present. The overall objective of the game is to discuss the potential impacts of floods and droughts on agriculture in the Prek area of Kandal province. Discussing the impact of floods and droughts on agriculture is a way to initiate a discussion among players about the issues they face and how they could solve **collectively**.

Phase 1: Designing the board

The game starts by asking players to represent their environment using a series of wooden tiles. The square tiles represent land (they can be used to represent chamkar, rice land or boeung). The blue tiles (of different shapes and size) can be used to represent water (river, streams, prek, ponds e.g. places where there is water during the whole year).

Example of Board

Bassac/Mekong			
1	9	17	25
2	10	18	26
3	11	19	27
4	12	20	28
5	13	21	29
6	14	22	30
7	15	23	31
8	16	24	32
Smaller river (opt.)			

The objective is to obtain a board of 32 tiles organized in 4 columns and eight rows, with a prek in the middle (as shown in the drawing) but if players/farmers insist to design a board of a different shape, the facilitator can let it happen *[avoid using tables that are too big so that players do not have the tendency to put down too many tiles]*. The board must also represent the Bassac (or the Mekong) on one side and there can be a river or a canal on the side opposite to the Mekong/Bassac (but this is not compulsory).

Players can and must stack wood tiles on the top of each other to show what the topography of the area is. There is no strict rule as to how many tiles of wood can be put on the top of each other but it is good to have between 4 and 6 different "levels".

Calculation: Count the number of plots with only one tile (no stacking). This will be useful to model floods and their impact (see below).

Take a picture of the board

Phase 2: Positioning key infrastructures

Once the board is set, farmers are asked to represent the main infrastructures that can be found in the area (for instance: pumps, pumping stations, sluice gates, roads, bridges, culverts, pipes, dikes, dams, small drains, etc…). They can use the different wooden pieces that are provided in the game box to do so. The "meaning" of the pieces is not defined a priori. This means that players can use any piece of wood to represent anything but it is important for the facilitator to know what each material represent and at the end of the session to write down its meaning (for instance: pump= white wooden square; bridge= red wooden square; color stick= road…).

Take a picture of the board

Phase 3: Positioning the players, the wells and the crops

Once the board is designed and the main infrastructures are represented on the board, each player is given a set of colored token (between 8 and 10 token). Players have to put a token on each wooden tiles to indicate where their plots are located (farmers may use a different number of token, hence may not have the same number of plots).

Once the players have identified their plots they can add wells on these (using the small round wood pieces found in the game box). They then indicate the crops they grow in **April/May** in each of their plots using the crop vignettes, which they put on the tiles. There are vignettes for rice, maize, beans, vegetables, sugarcane and fruit trees in the game box but farmers may request other crops – if so, the facilitator can just take a piece of paper and write the name of the crop on it *(It is better if there is only one crop vignette per plot but if farmers want to put several, this can be done – the facilitator can decide the rule)*

Take a picture of the board

Phase 4: Characterizing the water needs and economics of crops

Once the crops are identified, farmers need to characterize the water needs of the crops. To do so they are provided blue stickers which they have to stick on the crop vignettes. If a crop requires a lot of irrigation water, the players need to put 3 stickers on the vignette; if the crop requires medium irrigation water, the players put two stickers and if the crop requires only little water, the players put only one sticker. For the same crop, it is possible to have different numbers of blue stickers on different vignettes as the irrigation water needs depend on where the crop is grown [*it is important to tell farmers to use 1, 2, or 3 stickers to show differences between crops* e.*g. they should not put two stickers on all vignettes unless they explain why*].

After indicating crop irrigation water needs, farmers need to indicate the potential net revenues they expect from each crop using orange/red stickers which they also have to put on each crop vignette. If they expect high net revenue from a crop, they have to put three stickers on the corresponding crop vignette; if they expect medium net revenue they stick two stickers and if they expect low revenue, they stick only one sticker. It is good if the same crop has the same number of orange/red vignettes all across the board (for example: 3 stickers for mango trees and one sticker for beans) unless farmers can provide an explanation why some vignette of the same crop do not yield the same (ex. young and old mango trees).

Take a picture of the board

Calculation: Before starting this phase the facilitator needs to count the total number of blue and orange/red stickers on the board. Counting the **total number of blue stickers** on the crop vignettes gives the **total water needs for all farmers** (this is an important indicator to model droughts)**.** Counting the **total number of orange stickers gives the maximum revenues farmers can expect** (if they do not loose crop because of droughts or floods).

The facilitator puts as many beans as there are of orange/red vignettes on each of the wooden tiles – this is to represent the potential revenue of farmers.

Phase 5: Simulating the impact of a drought

The next stage is to "simulate a drought". After having counted the total number of blue stickers on the board, the facilitator put marbles in a longitudinal container in the middle of the board, telling players that, this year, this is the water available for irrigation in the prek for the dry season. **The total number of marbles should be lower than the total number of blue stickers** (for instance there should be 10 less marbles than the number of stickers) so that players can discuss –if they want- what they can do together if there is not enough water for everyone to irrigate their crops. The facilitator can decide to model a small drought (putting only 10 marbles less in the container) or a big drought (putting 20 marbles less in the container). **We recommend starting with a small drought.**

Players can take as many marbles as they want in the container and need to put them on their plots *[the facilitator leaves the players behaving as they want to take the marble]*. Once all the marbles have been put on the board, the facilitator compares the number of blue stickers and the number of marbles in each plot. If there are more marbles than blue stickers on a plot, the facilitator adds a small bean on the plot to represent that the crop has produced a lot because it was very well irrigated; if there is one less marble than blue sticker, the facilitator takes away a bean to show that yield is lower due to inadequate irrigation; if there are two less marbles than blue stickers on a plot, the facilitator takes away two beans to show that yield has decreased a lot; if there are three less marbles than blue stickers on a plot, the facilitator takes all beans from the plot and turns the crop vignette to show that all the yield has been lost and crops have died *[if farmers explain this is not the case because the crops have resisted, the facilitator can turn back the vignette but still take away the bean]*.

Take a picture of the board

Phase 6: Simulating the impact of a flood

It is then time to model a flood. In a normal year, we consider that all the boeung (represented by the plots where there is only one wooden tile – no stacking) is flooded and that it does not affect the crops. To model a normal flood, the facilitator puts as many marbles as there are of Level 1-tiles in a small recipient (for example of plastic or paper glass), moves the glass along the preks and start distributing one marble per plot, starting from the end of the Prek. Highlighting that it is a normal flood, the facilitator indicates that farmers have had time to harvest their crops and players are asked to take the beans that remain on their plots.

Take a picture of the board

Calculation: The facilitator asks each farmer to count the number of beans they have taken from their plots. This represents this year harvest and this needs to be written down.

Phase 7: Repeating Phases 5 and 6

The phases 5 and 6 can be repeated as many times as the facilitator wants so as to initiate a discussion on the distribution of costs and benefits linked to droughts and floods. The first time droughts (phase 5) and floods (Phase 6) are modeled is for farmers to understand the mechanics of the game. The second time is made to initiate a discussion. We recommend simulating one more drought and one more flood, using a dice.

Before droughts and floods are simulated, the facilitator needs to put as many beans as there are of orange/red vignettes on each of the wooden tiles again – this is to represent the potential revenue of farmers in this new year.

- **Phase 7a:** Simulation of another drought. The facilitator throws a dice. If the dice result is 5 or 6, then the facilitator puts as many marbles as blue stickers in the container so that, in theory, all irrigation water needs can be met (it is a good year). If the dice result is 3 or 4, then the facilitator puts 10 marbles less than the number of blue stickers (it is a small drought). If the dice result is 1 or 2, then the facilitator puts 20 marbles less than the number of blue stickers (it is a big drought). As in Phase 5, the facilitator compares the number of stickers and the number of marbles and adds or takes away beans from the plots accordingly.

- **Phase 7b:** Simulation of another flood. The facilitator throws a dice. If the dice result is 3 or 4, then the facilitator puts as many marbles as there are of Level 1-tiles in a small recipient and distribute them starting from the end of the prek (it is a normal flood and there are no losses). If the dice result is 1 or 2, then the facilitator puts 5 marbles less as there are of Level 1-tiles in a small recipient and distribute them starting from the end of the prek (it is a low flood and the facilitator needs to ask if plots in the boeung that did not receive marbles are negatively affected). If the dice result is 5 or 6, then the facilitator puts 10 marbles more as there are of Level 1-tiles in a small recipient and distribute them starting from the end of the prek (it is a big flood). Once the facilitator has put a marble on each Level 1-plot, it adds a marble, starting again from the bottom of the board. Once each level 1 plot has two marbles, the facilitator start adding marbles to Level 2 plots (plots where two tiles are on the top of each others) and so on. Then, once there is no more marble in the recipient, the facilitator takes away a bean on each plot where there are two marbles to show that some crops were lost due to the drought.

Take a picture of the board

Calculation: The facilitator asks each farmer to count the number of beans they have taken from their plots. This represents this year harvest and needs to be written down.

It is a good idea to have (at least) two people to facilitate each game session. One person can facilitate the game, discuss with the players to explain each stage of the game and provide the materials farmers want to use to represent their environment. The other person is responsible for observing the session and taking notes (e.g. the meaning of each piece of material put on the board, which player is active and vocal during the session, what are the main topics of discussion, etc. – see separate observation guide for details on the notes that need to be taken).