

## Appendix 3

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### Appendix 3 – Mahasaly meta-game development process

The Mahasaly game is based on the narrative of contexts, that influence decisions of farmers in the maize boom as described in Figure 4. Mahasaly incorporates elements of structure, parameters and lessons from the six local games presented in Appendix 2.

The MIALU and MALAD games in particular formed the basis for the board design, tokens and rules since they represented the re-investments in land and family and land degradation issues respectively and illustrate impacts of decisions on land use patterns. One round in the game equalled one cropping year, with subsections per round: i) land use choice and allocation, ii) announcement of harvest yields and payment of net revenues, iii) choice from consumption/investment market, announcement of new opportunities for the next year and taking credits if necessary. As in earlier games, the family orientation was represented via household cards indicating family members, labour capacity, minimum needs for family consumption and announcing the goal of the game to 'manage and develop your farm household'. Labour force was represented through round tokens that had to be put on the plot where they were 'working' in a respective round. Variations of market conditions (availability, stability, competitive alternative) stemmed from MAPRI (profitability and relativity of prices), MaRISK (opportunity and risk from credits) and TAKIT (competitive alternatives to maize). The market value of different land use options was represented on PowerPoint slides projected on the wall and through facilitators who acted and played the role of traders (two different maize traders, other trader offering opportunities with cassava and job's tears). To allow for an adoption phase we started with a situation where no maize is present – neither in the landscape, nor as an option on the market. The changes of market conditions were announced before each new round of land use allocation by displaying information on inputs and promised outputs per crop on PowerPoint slides. The consumption market goods were listed on posters indicating characteristics and prices. Participants could come to a small table (located beside the main playing table with the game board), where the consumption goods could be bought. Coloured papers around plots indicated land ownership of households, each being assigned a different colour. This allowed for quick visual analysis of changes as we monitored and debriefed land use patterns. Upland rice shifting cultivation was represented through a 3-steps cycle from upland rice, young fallow, old fallow with yield decreases if the same plot was cropped more than one year in a row. In reality cropping cycles include a 5 to 8 years fallow, but as we only played 6 rounds this simplified rule allowed to introduce key aspects of ecological degradation and regrowth dynamics in the limited time available. Furthermore, the livestock systems that were often mentioned in interviews and focus groups were incorporated in a simplified form to represent the attractiveness and risk of this farm activity while not getting lost in the complexity of crop-livestock interactions. Risk was introduced by announcing unpredictable disturbances to farmers such as livestock diseases or contract breaking by traders in the harvest phase of the round. These negative events affected the profit made from the respective

land uses. They were deliberately planned by the researchers/facilitators of the game but unknown to the players at the time of choosing their land uses for the round.

Figure A.3. Description MAHA SALY game played with Lao agricultural experts in Vientiane Capital

<p><b>Basic game information</b></p> <p><i>Name:</i> mahasaly – maize boom meta-game (spatially explicit board game)</p> <p><i>Research objective:</i> to evoke land use decisions that cause the maize boom and bust</p> <p><i>Player's objective:</i> manage your farm and household according to your wishes</p> <p><i>Target audience:</i> local agricultural experts</p> <p><i>Number of players:</i> 6 participants play 1 household each, 3 farm household types (different household composition, wealth status, initial land uses) each represented twice</p>
<p><b>Resources</b></p> <p>(1) <i>Board</i> of 8x8 cells, 48 cells agriculture out of 64 cells total, small stream bordering 8 cells</p> <p>(2) <i>Household (HH) cards:</i> HH number, family size and minimum income</p> <p>(3) <i>Colored fences</i> to identify land use cards of each HH on the board</p> <p>(4) <i>Land use cards:</i> paddy, upland rice, young + old fallow, pasture, maize (1<sup>st</sup> year on a plot good yield, 2<sup>nd</sup> year less yield), cassava, job's tears, conservation forest</p> <p>(5) <i>Posters:</i> (i) parameters for the land use choices available per round (inputs: financial and labour; outputs: yield, price and total revenue) (ii) market goods and prices; (iii) table to record results per HH.</p> <p>(6) Tokens representing labour force and game money in MLAK</p>
<p><b>Mechanics</b></p> <p><i>Rules.</i> paddy only along stream, no agricultural use of conservation forest, growing maize or upland rice repeatedly on same plot reduces yield, shifting cultivation requires 1 round-steps in sequence: upland rice, young fallow, old fallow;</p> <p><i>Rounds (n=5).</i> First, players chose what and where to grow in the next year. Second, all choices are recorded and money collected for activities with inputs. Third, revenues of farming paid out, minus family needs. Fourth, players spend their money.</p> <p>Changing conditions per round:</p> <p>round 0: upland rice, paddy rice, livestock available as income generating land uses</p> <p>round 1: trader 1 provides maize as opportunity (a. op.),</p> <p>round 2: pest outbreak, all livestock infected and lost</p> <p>round 3: pest outbreak reducing livestock by half, good revenue of maize</p> <p>round 4: trader 1 breaks the contract and neither picks up nor pays for maize</p> <p>round 5: trader 2 provides maize (a. op.) again, trader 3 provides job's tears and cassava</p>
 <p>Experts allocating land use in mahasaly</p>