**OL 333 Assignment One Homework**

**Online Learning: OL 333 Climate Smart Agriculture.**

<https://csd-i.org/ol-333-climate-smart-agricult/>

**Examples of information that might be discovered in the initial farmer assessment.**

Many of you did participatory assessments in 343 or 344. They covered a wide range of topics such as agriculture, water, hazards from a changing climate, and disaster risk reduction. We need to revisit this in Assignment Two. We're going to try and discover the specific challenges that farmers face and if solving the challenges can increase their resilience to the hazards and risks of a changing climate.

It's conceivable that you already did this in one of your participatory assessments. If that's the case that you don't need to go through the whole workshop lesson plan and assessment again.

It's also possible that in your participatory assessment with the community you uncovered 75% of what you need for this assignment. If that's the case then you might be able to have a small meeting with a few representative people to gather the information about the last 25%.

It is likely that you will not need to make any changes to the agricultural component of your original project outline. In fact it would be best if you didn't change your project—but simply make the definitions of the challenges more highly specific.

If you didn't do a participatory assessment (this could include participatory mapping, a seasonal calendar, a historical timeline, and a vulnerability assessment) then this week and next week will be perfect for you to accomplish that.

What we're hoping to do in these two assignments is to identify and then prioritize the greatest challenges that these farmers face that are reducing their resilience to risks and hazards and increasing their vulnerability to risks and hazards. From this prioritized list we will then begin looking at potential solutions specific to your community's context. Then over the next six assignments we will explore different technologies and activities so that you will be better prepared for fine-tuning the solutions that you uncover.

Here is a range of challenges risks and hazards that farmers face arranged in a loose matrix. Loose, because on the one hand it's difficult to determine where to put some of the risks and hazards, and on the other hand they could go in several of the sections—but I didn't want to be repetitive. I'm not expecting you to analyze your farmer's context for each and every one of these items—these are just background ideas that will increase your awareness of things that you might discover.

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| **Challenge** | **Potential Solutions** |
| **Vulnerability to Shocks**   * crop pests * crop diseases * droughts * floods * changing climate patterns * change in seasons | * integrated pest management * crop rotations, mixed cropping * increased OM in the soil, water harvesting, water management * embankments, dikes, watershed management * early maturing crops |
| **Soil and Soil Quality**   * low levels of organic material * high levels of clay—or high levels of sand * compacted soil * degraded soil * eroded topsoil—wind/water * gullies * pesticide residue * depleted soil nutrients * overgrazed * marginal or vulnerable terrain   + steep terrain   + Desert   + floodplain   + wetlands   + forest encroachment   + fragile environments | * restore and better manage degraded systems * composting * mulching * incorporate crop residues into the soil * barriers to water movement * integrated pest management * better matching nutrients with plant need * soil tests * the use of leguminous plants that fix nitrogen * green manure * land management plan |
| **Water**   * dry * sufficient * saturated * flooded * access to agricultural water * rain fed agriculture | * increased organic material/mulching * barriers to water flow * zai pits * water conservation and management * drainage * dikes/embankments * relocate farm fields * landscape-level solutions |
| **Agricultural systems**   * planting/harvesting systems * monoculture * biomass burning * tillage system * reduction in biodiversity * ecosystem encroachment * waste in harvesting, processing, supply chains * post-harvest losses * overgrazing * deforestation * production rising/falling? * lack of training/extension | * alley cropping * agroforestry/multipurpose trees * crop rotation * drought resistant and early maturing crops * sustainable resource use * mixed cropping * conservation agriculture * low tillage/no tillage * direct seeding * ecosystem management * food processing enhancements * reduced crop wastes * storage silos * improved transportation of crops and produce * crop diversification * intercropping |
| **Livelihood**   * family food security and nutrition * income * farmer organizations/associations * market connections/links * marketable crops * sufficient sales to markets * access to credit * migration in search of work * land tenure | * home gardens * improvements in production * market links * formation of farmer associations * survey of businesses to determine their product needs * receiving training from buyers/businesses * partner with the microcredit organization * improve income generation * advocacy campaign |