**Wednesday 2015-02-18**

**9:00 a.m. Data needs for animals and humans sampled (Damien)**

Principles

• App that collects data

• Limiting the number of required fields

• All the answers are dropdowns or text suggests.

Lessons from PREDICT 1

• Things that were last-minute fixes

• How we communicate IM problems. Cross-organizational committees or something. Like how we communicate changes down to country coordinators and field people.

◦ Different organizations viewed the surveillance calls differently.

◦ Feedback from countries when they receive stuff?

◦ Having an app that can be updated on the fly is good.

PREDICT 2 surveillance data flow collection

• “We have some splitters in our organizations.” Apparently some people wanted to split out interaction with monkeys at temples.

• The app is meant to be responsive, presenting different questions in different scenarios.

• Discussion of mandatory modules versus follow-up questions versus TurboTax-style prompt for everything

My idea: Do we have questions which are the same behind the scenes for different modules?

Pre-populating sites that you’ve already been to.

• Have you already been to this site before? If you say “Yes” you get asked event-specific questions, but not like, site-specific questions.

**• Don’t look up things that are available through global public databases.**

• E.g. weather.

◦ Is weather available for a given place and time?

◦ Would small-scale variations, like, hourly, make a difference?

Database Structure

• Data is normalized. Damien is explaining how this works.

• We don’t know how “Interface” should be classified.

◦ CKJ: “interface” should be an animal-specific thing.

◦ Posterior analysis of data to define interface? PCI, for example. (Damien and Kevin)

• How does “area” or “pathway” fit in?

◦ You could have multiple sites and subsites with GAINS, but nobody used it that way. (Damien) You could have multiple lat-lons in a single site.

**◦ Discussion around sites need to happen.**

• Sampling Group / Unit came below “event” but nobody used it and it may not happen.

◦ Discussion early on was that, say, people might sample a cage. Pooled samples and environmental samples.

• You have a one-to-many relationship between events and individuals. Whatever you collect about an individual animal was the next level in the hierarchy.

◦ Sample Unit came below the individual. In terms of like resampling.

• We’re going to move lat-lon to “Event” and have “Site” use the centroid of those.

• Sample Unit will remain because we’re definitely doing follow-up sampling in people

◦ There are standardized ways of coding follow-up sampling for people.

◦ We need to figure out generating IDs and matching resampled people to their IDs.

◦ If you’re following a person, you might want to track their contacts too?

**Module Grouping**

Then we spend some time hashing out The Checklist.

We need to add a “Habitat” section.

Markets & Value Chain

**• CKJ: USAID is really interested in the movement and concurrent use of animals.**

• Market should apply both to large markets and the small, informal sale of animals.

• We want to sample along the value chain. That’s where Market (Formal or Informal) becomes crucial, because that’s who you capture the value chain (Karen).

◦ Maybe “Market & Value Chain” instead of “Market & Trade”.

◦ And you pick a node along the value chain

Restaurants

• Kevin: Three concurrent aspects

◦ Scale

◦ Timescale—is this a four-week time when the bat goes from here to here

◦ All the behavioral risk side, what is the actual interface?

Extractive Industry

• Maureen: It’s problematically broad. How do you create a module around this? Palm oil plantation, gold mine, guano mine?

• Palm oil is like land use change.

• Karen: There are a number of things you’d want to capture with different modules.

• CKJ: We want to know what land use is going on at every site.

◦ They’re partnering with certain extractive industries to do sampling at those sites.

• Karen: There are all sorts of concessions and pop-up restaurants at the perimeter that we want to sample.

**• Extractive industries aren’t an interface in themself, but they structure and catalyze other kinds of things we’re actually interested in. USAID is interested in this.**

◦ Do we want to have it alongside Environment, i.e. is it another category alongside Rural, Urban, Low Disturbance?

◦ With the modules, we’ve gone from “Type of Site” to “Which of these are present at site? (check all that apply)”

Natural area / habitat

• There was a park in the center of Jakarta.

• How do we determine scale.

• We need to find some language that captures the breadth of wildlife.

• “Area set aside for natural area with wildlife (examples)”?

• This module is important for ecotourism type questions. This will be happening even in pristine areas.

• The module would ask the scale questions? Would people not choose it? Language to capture all scenarios where this module would be picked is tricky.

• The Deep Forest project has really informed how you classify area of disturbance.

◦ But these questions are around the man activities going on in the area.

Dwellings / structures

• The hospital module should be broken out from this.

◦ For a community hospital, you’d want to know where that hospital draws from, patient-wise. Is it specialized for trauma? How many beds? Is it just local or does it draw from a wide area?

• Damien’s push-back: we want to know about the people, not the hospital.

• It’s kind of like “Outbreak” where there’s a specific form.

We’ll finish up the obvious modules like Agriculture and we’ll then go back to the human-specific oddities like Hospital and Outbreak.

Free-ranging, backyard, semi-industrialized and industrialized animal production (6–9).

• E.g. bamboo rats, duck farms.

• Zoos and stuff.

• Size, how are the animals housed, etc.

• Animal production facility.

• Can you get at scale with questions within the module? And then ask further questions based on that. Like, ask about “does one person own this?” and “how many animals” and select the questions you ask based on that.

Agriculture

• CKJ: This needs to describe like, agriculture as in palm oil and plans and corn and crops. Not agriculture as in raising animals.

• Maureen: How is this different from “Extractive Industry?”

• CKJ: This is like, an interface, because it’s sometimes backyard and it’s about what animals are eating and pooping on stuff that’s then consumed by people.

• “Crop production”.

• David: You want to be consistent with USAID horticultural guidelines.

Dwellings / structures

• Zoos?

• Abattoirs: Where you work or where you live or where you attend?

• Capturing animals in people’s houses?

• Structures designed for wild and/or domestic animals?

• This is complicated.

• Hospitals: They are here. They should be here AND/OR a separate hospital sampling module, because they are a dwelling and also we are doing special sampling there. We should pull hospital out.

• Temples? How does this fit in.

◦ It’s like tourism and people are selling things and stuff.

◦ To CKJ, that’s different from where people live and work.

Wildlife Sanctuaries

• This is its own thing

David: What seems obvious to us is not to other people. Trans-cultural communication is difficult.

**Outbreak Response and Hospital Modules**

• We want a specific outbreak data entry.

• Corina

◦ There’s an outbreak response form. It’s used in PREDICT 1 and was useful.

◦ There’s a text notes field. Could be uploaded.

• These are outbreaks in people of undiagnosed diseases.

• Animal outbreaks aren’t likely to be collected

◦ Most animal outbreaks aren’t related to zoonoses so aren’t specific

◦ Damien: We should leave ourselves open to this.

• In response to the Ebola outbreak we had the opportunity to go in and sample rodents and bats.

◦ So would you want to capture that animal sampling is happening in response to a human outbreak.

Toph editorial interjection: It does seem that we’re like, trying to do EVERYTHING in one thing.

**LUNCH**

**Data from Humans: What do we really need?**

It’s a discussion of the behavioral research flow, the differences between the draft questions and the final, and stuff like that.

Do we want to use this meeting to decide on a Behavioral Survey Beta?

There’s lots of haggling over the individual questions on the behavioral survey, the purpose of the whole thing, etc.

Universal wealth indicators? Dependent upon where you are.

• Maureen: In the last year, has there not been enough food to feed people in the household?

Karen, Maureen (and I think we all agree): A lot of this, the more nuanced and specific stuff, will be determined from the qualitative work. But for this draft, we should ask questions which are more concrete and specific.

How long should the survey be?

• We should base this on how much time we want people to spend filling out the site characterization?

• RSC: 10–15 min

• Modules: 3–5 min

• Individual data:

◦ 15–20 min samples

◦ 20 min survey

Education level is a good SES-related question to ask because it not only defines stuff about SES but could be related to risk mitigation behavior.

Discussion of IRB and sampling and how you link people to repeat samples.

Illness and Death

• Ask about syndromes, not symptoms

• Karen has a set of questions which are about specific syndromes.

Asking about animal contact

• What taxa do we want to stick to?

• We’ve perhaps been *too* exhaustive asking about this in the past?

Risk perception questions would be useful to ask. Like, “How dangerous do you think it is to *x*?”

• We’ll ask these things in Qualitative first, and see if we want to add them to future iterations of the behavioral survey.

• Good for like, intervention design and risk mitigation.

From PREDICT 1, we’re missing a lot of data on the *how* and the *why* of contact.

Karen shows us a survey used on a previous PREDICT project (Visions?) showing for different animals, handled / slaughtered / cooked / found dead and collected etc.

• High risk study in Vietnam.

• There’s a cover page with personal information; then they de-identify that stuff.

• List of professions. It’s with short descriptions.

• Then there are risk perception and risk behavior questions.

• Risk motivation questions. CKJ wants to put them in but Maureen (and I) think it’s silly to do now + qualitative research will tell us about this *and* what questions to even ask.

• The syndromic questions are a good template.

◦ ILI

◦ Fever with rash

◦ What symptoms are indicative of viral families we’re looking for?

Discussion of how you get people to identify animals

• Show them pictures?

• Bats vs. birds? They look the same from afar. People haven’t seen bats.

• How do you ask these questions without people getting bored and you losing data?

◦ I think people were talking at crossed purposes here, describing the same problems and slightly misunderstanding and then describing the same things differently and thinking they’re describing different things.

• You ask the “Do you ever do x with animals” questions, ALL of them, first, and THEN you go through for each they answered yes for and ask what animals they did them.

• Is there a way we can cascade a “why” question?

◦ Maureen: No, because we don’t know WHAT to ask.

◦ CKJ: What about economic livelihood vs. medical vs. etc.

◦ But then you’re predetermining categories.

◦ CKJ REALLY wants this but EHA and Metabiota people don’t want them.

◦ CKJ comes round (or gives up) in the end. “Ok. Deal. It’s on you.”

Risk perception

• Is PREDICT interested in this?

• Is it a follow-up study?

• We need to know what people feel is risky.

• Some of the risk perception stuff you don’t need qualitative to get to it.

**• Damien: This may be the only time we have these subjects in hand. We need to find the balance between opportunity *lost* and opportunity *cost*.**

• David: Usually when we ask these questions we end up with a line in a manuscript saying “25% of people think zoonotic diseases are a problem”.

• David: There’s the opportunity for follow-up and I feel like we’re frontloading too much.

• CKJ: So we can add \_\_\_\_\_\_\_\_\_ or the risk perception modules to our surveys easily in Y2.

Indirect exposure to pathogens—questions that get at that

• Exposed drinking water.

• Aerosolized blah blah

◦ Moving of cages

• Do you want to put them in the question or the observed module?

◦ Both, so you can compare how they behave to how they report their behavior.

CKJ: We need to understand the movement of animals between sites, for the new PREDICT perspective. Should we be asking more to help us understand that?

• David: That’s more focus group stuff.

• CKJ: IRB stuff! David/Maureen: You don’t need a new IRB when you update a questionnaire you just need to request an amendment.

• Corina: You could create a long questionnaire and have it approved for IRB and just do a subset of it in actuality.

Longitudinal surveillance is TBD.

• Damien: Could we have a longer questionnaire that we do over two/three visits? Karen: Those are just follow-up questions. David: [Verbal noises indicating assent].

• My notes are getting kinda weird now.

• Damien says he probably has a bias towards markets where you see the same people time after time.

• Longitudinal studies formalized are a big cost.

We are getting tired.

We’re also getting confused about modules and stuff, and focus group versus questionnaire versus observational etc.

Animal die-offs.

• CKJ wants to add this.

• Might add a lot of non-useful cruft.

• But KJO points out that these questions are only shown if you say you raise livestock.

**The Hospital Survey**

*General mood in room: pretty fried right now.*

It’ll be pretty easy to collect data in hospitals on sick people.

• We will couple this with serology to diagnose what they have.

**• This is a *perfect* setup for a classic case-control study, comparing the people we have in hospitals with our highly pathogenic zoonotic diseases and people with known diagnoses like influenza.**

Inclusion criteria?

• Symptom category? Risky behavior category.

**This kind of is indicative of one of my major worries about the project; that is, I want to make sure we have enough control data to make comparisons across groups.**

Maureen: You don’t need samples from controls. They already have a diagnostic.

Damien: We don’t usually get samples from controls from hospitals we work in.

Corina: You could get like the hospital’s average dengue positivity rate.

People: There are differences between the clinical and lab diagnoses.

Standardized intake form.

• Based on something standard or something they made themselves, but there are some questions in the middle which we inserted ourselves.

What are our inclusion criteria? Symptoms. Diagnosis. Contact with animals.

**Corina: We want to understand, what day of symptoms are they at.**

**Ok, this just seems… like, is this program designed to assess risk factors for zoonotic disease surveillance or is it designed for epidemic detection and response?**

• This is resource-minimal. You get more samples, but you get less information about these samples.

• But if we’re spending a lot of money working up these samples, why not go and do the longer questionnaire about them?

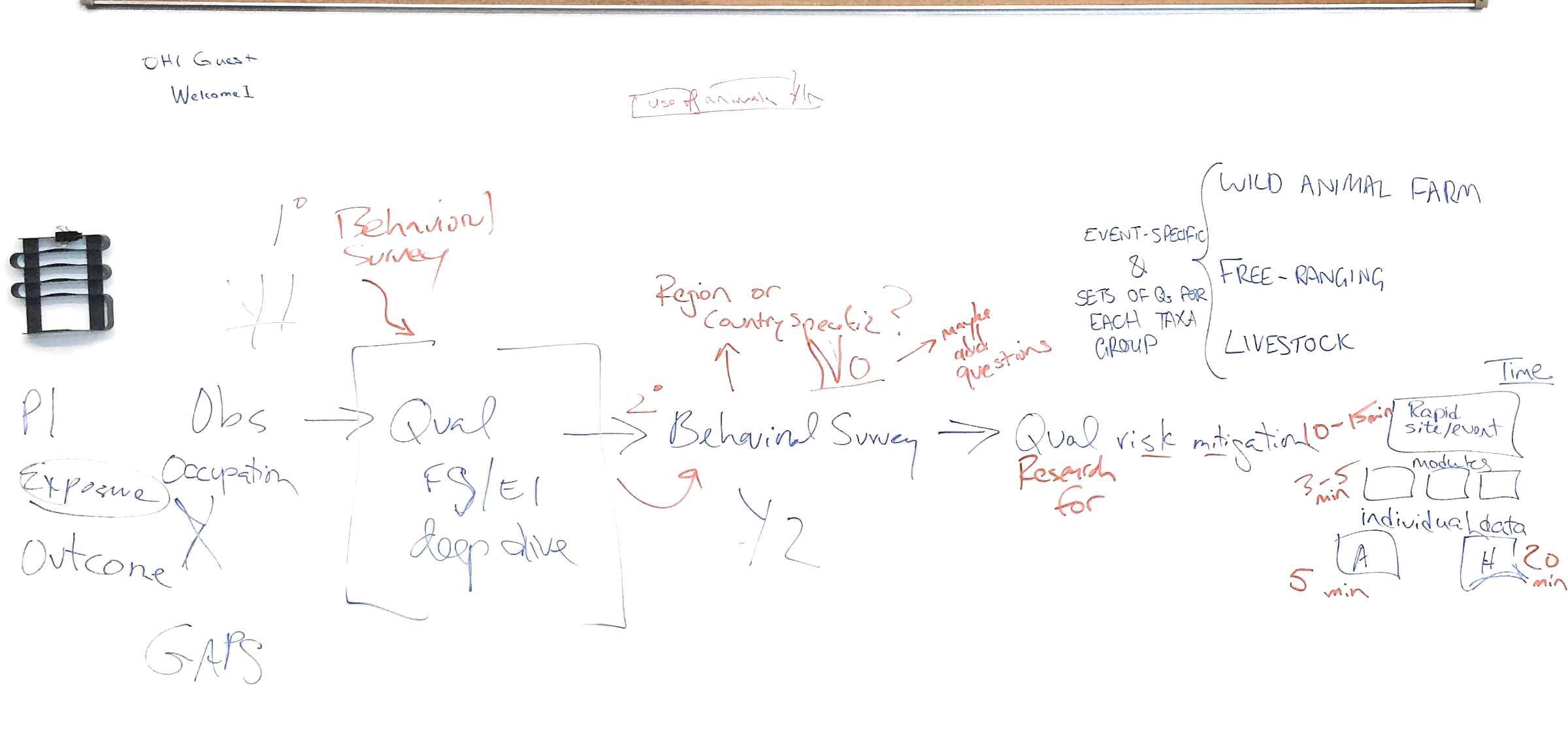
• These are patients who come in with some severe syndrome. They might have gone home or they might be…

• That might be a month or a couple of weeks, from when they’re admitted to when we get the sample, depending on the protocol of the hospital/country.

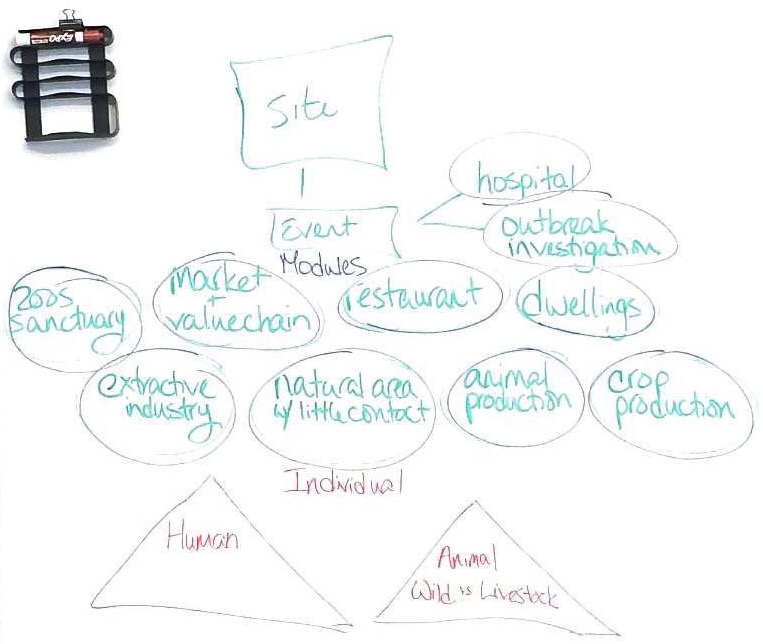
• These aren’t deep-freeze samples. They’re… “shallow-freeze” (Damien). Kevin: versus no-freeze? Fresh Direct?

We spent some time going through the form. Maureen doesn’t know if it’s informative enough.

Here’s the whiteboard:



**Thursday 2015-02-19**



**The behavioral protocol and IRB**

• Metabiota brought it over to UCD for PREDICT but it took like 9 months for the continuing review last time.

• It’s an outdated protocol.

• We’re doing our own IRB, Hummingbird.

**• Corina: We’d talked with Damien the idea of a PREDICT IRB board, with a representative from each of the consortium partners.**

• IACUC (?) will be done through a government board probably—Metabiota doesn’t have their own.

• At EcoHealth Mindy is the one with the most animal experience.

• Maureen has a draft of something.

◦ What we’re doing is country by country, so if one gets held up it doesn’t hold up other countries.

• Emily Hagan will be EHA’s Capacity Building person. Maureen: “I can’t be on every single one of these.”

◦ Helping with the regulatory stuff. Getting permits and approvals.

• Karen: Perhaps we can get an exemption for the pilot stuff. You can have a protocol associated with the exemption.

◦ Maureen: No, you’d have to go through IRB.

◦ CKJ: Do we have an exemption to ask people questions in response to an outbreak? Hmm.

*• All: We should save time for the timeline.*

• Karen: Pilot studies and interviews in Y1 is great. It’s not that we’re waiting for Y2, we’re getting started as soon as the tool’s read, and then we’ll add to it in Y2. That’s how we should sell it to USAID.

◦ CKJ wants us to just get some concurrent sampling up and running.

• The site characterization should be up and running in 8 weeks.

• Maureen: You need to go update the protocol

**Tammie is going to Boston next week to sit with HealthMap and work on the app’s architecture. I want to stay in the loop on this.**

Developing the app, the 8 week timeline is something CKJ hasn’t yet come to terms with.

**• If we had to prioritize modules, we’d pick *Market & Value Chain* and *Animal Production* first.**

• Other priorities are TBD.

**General Site and Event forms**

We’re going through the data entry workflow, outlining it on Google Forms.

• Events have lat and lon. A site will have a lat and lon as well. All events within *x* radius for that belong to that site.

• Present at site: there’s some haggling over names of things.

**• I am going to take all PREDICT 1 data and looking at the general buffer that defines a site.** Quick spatial analysis on what the typical “site” is, and that’ll inform PREDICT 2.

There’s a big debate about how we ask about or measure scale.

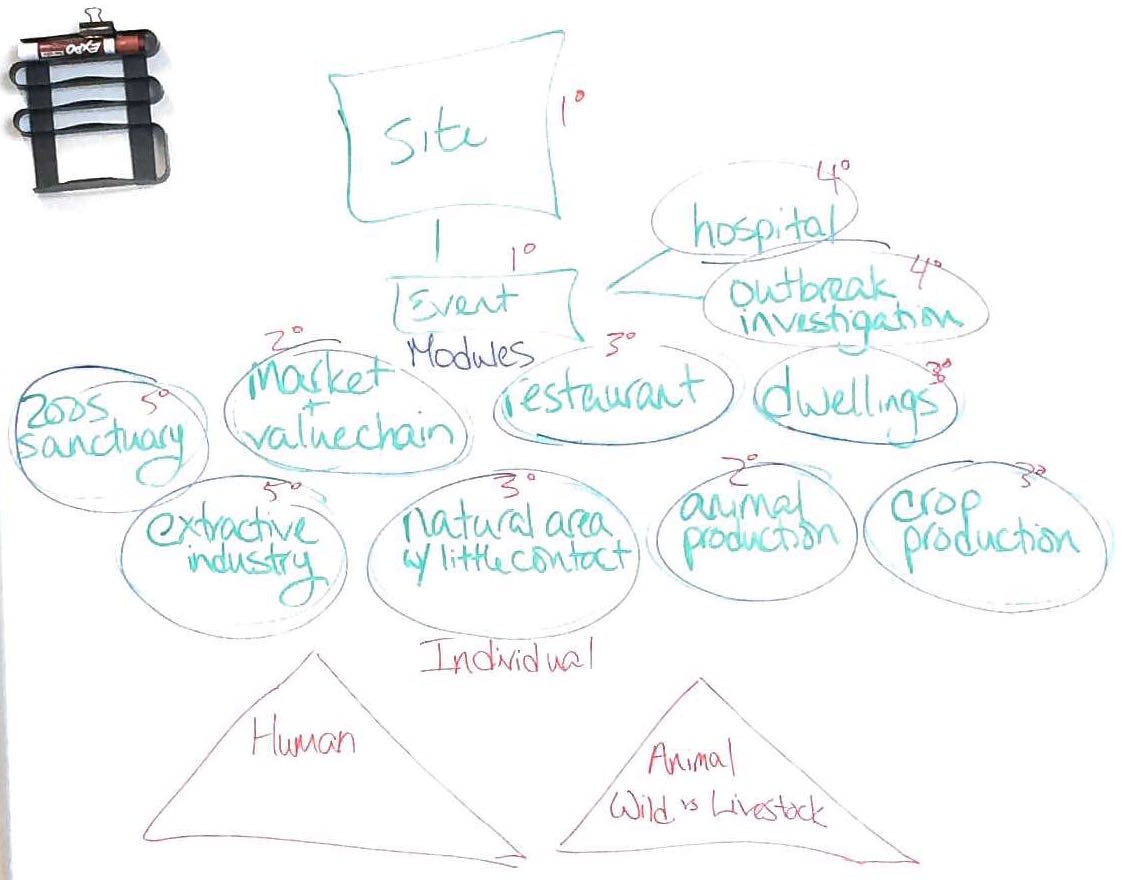
• CKJ wants “Size of site in km” as scale.

• I think we should have module-specific measures of scale.

Additional human impacts around site.

• Within 5km of site.

**Module prioritization for today**



And here’s a printout of Tammie’s Google Forms version of the checklist thing:

General Site and Event - Google Forms.pdf

We’re also referring to Mindy’s documents from the [P2-BEST Meeting 2015-02-12](evernote:///view/63109/s1/2600bce3-ac04-43e9-a909-1b976fa2aa77/2600bce3-ac04-43e9-a909-1b976fa2aa77/)

We’re partitioning stuff into different modules.

• Some questions are going to be in multiple modules but not all of them.

Human population estimate

• CKJ wants people to guesstimate how many people live within 5km in each direction.

• Her argument is kinda convincing.

Wildlife box

• We ended up removing the wildlife box afterwards. **We will provide per-taxa biodiversity for each site.** If we don’t have data of that quality, then we’ll add it to the country coordinator’s job list.

• Voucher specimens? Bar-coding?

**Module: Natural Area**

Protected area: Yes/No

**Module: Market & Value Chain**

*• Idea: maybe we can have a single unified list of animal categories we apply to all relevant questions. (I communicated this to Damien.)*

• Debate about a table with alive / dead / part of animal.

• Poop questions.

• Slaughtering: Are you slaughtering different taxa, central slaughter location, blah blah.

**Module: Animal Production**

• We don’t have the best way of quantifying farm intensity.

**Divvying up remaining modules**

• Hospital: Corina/Maureen

• Outbreak Investigation: Capacity Team (Terra)

• Crop Production: Kevin/David

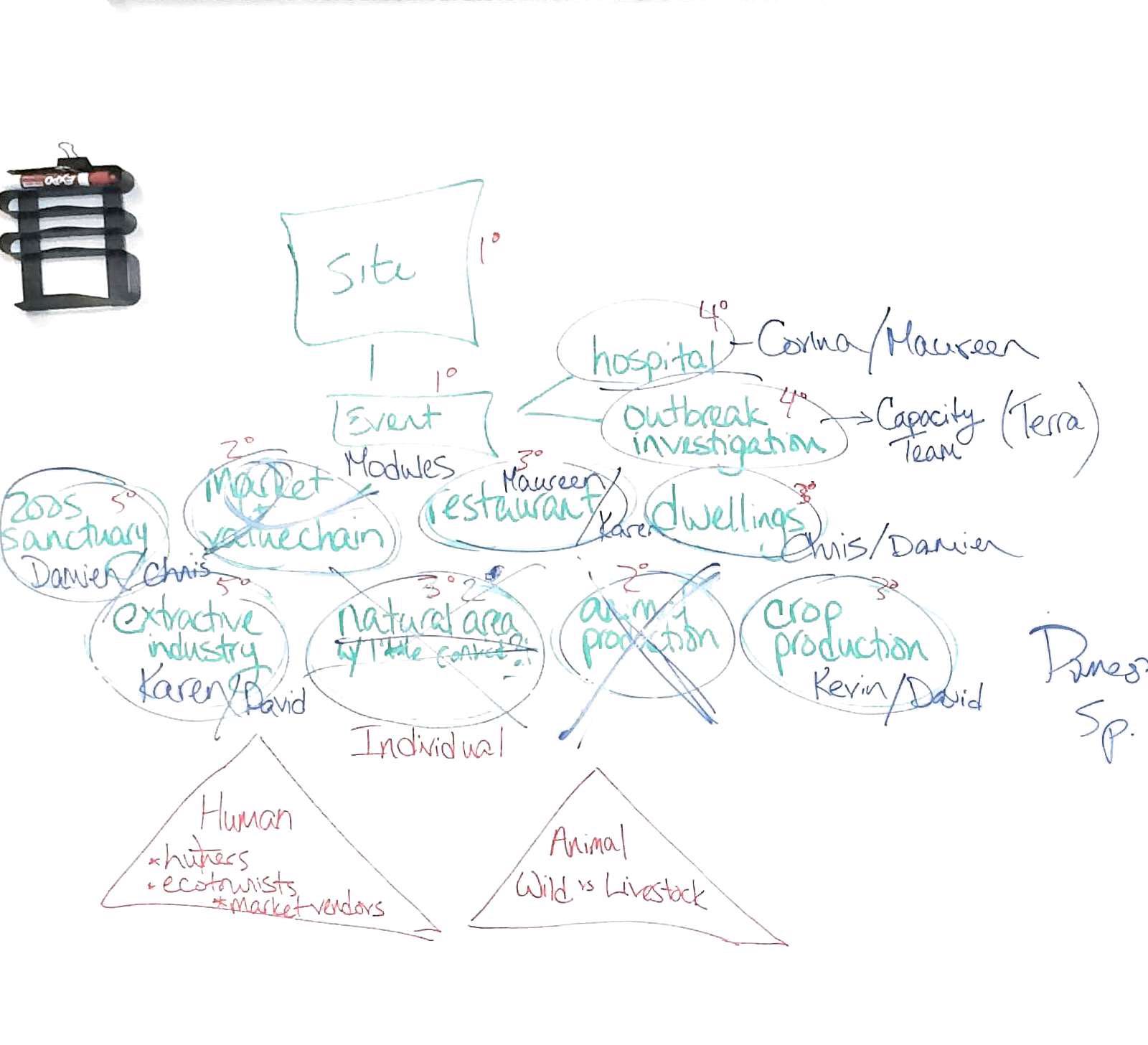
• Extractive Industry: Karen/David

• Restaurant: Maureen/Kevin

• Zoos & Sanctuaries: Damien/Chris

• Dwellings: Christine/Damien

Drafts due March 2nd.



**Final Discussions**

*We discuss information flow.*

• The human module is a totally separate module. Maureen → Karen.

• It’s a “separate data collection moment” – Karen.

◦ Who is it, in this “cast of characters”, and then that gets its own set of separate modules.

• Human modules for:

**◦ Dwellings & temporary human settlements: Toph & Terra**

▪ Refugees

▪ Influx into urban areas / slums

◦ Restaurants: ~~Maureen~~ Corina

◦ Hunters: Corina

◦ ~~Ecotourists (ecotourism providers)?~~

◦ Market Vendors: Karen

◦ Crop workers: Maureen

**◦ Animal production workers: Toph & Terra**

◦ Extractive industry workers: Karen

◦ Zoo/sanctuary workers: ~~Corina~~ Maureen

• It’s gonna be mostly whittling down existing questions to five. They’re in the document Tammie already sent out (see above).

