



JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD ADDITIVES

Fifty-third Session

DISCUSSION PAPER ON MAPPING FOOD CATEGORIES OF THE GSFA TO THE FOODEx2 DATABASE

(Comments of the European Union, Ghana, Russian Federation and ICBA)

European Union

European Union Competence European Union Vote

The European Union (EU) welcomes the discussion on mapping food categories of the GSFA to the foodex2 database for future assessments conducted by JECFA in the context of total exposure to each additive and to verify that the total exposure to each additive does not exceed each ADI.

The EU favours options which allow JECFA to conduct an independent exposure assessment following the current principles for safety assessment of chemicals in foods and taking account of developments for tools already in use by other risk assessment bodies. The participation of all potential users in the refinement and completion of the new system should be encouraged.

Ghana

Position: Ghana supports the mapping of FoodEx2 and GSFA and endorse all the recommended approaches.

Russian Federation

Regarding the Process for Updating the Mapping, the Russian Federation supports option 2, JECFA to request of CCFA to update the mapping in response to any updates to the GSFA food category system.

ICBA (International Council of Beverages Associations)

On the topic of mapping the GSFA food categories to the European FoodEx2 database, ICBA invited a recognized risk assessment consulting firm, Exponent, to provide perspectives on this discussion draft. Exponent provides consulting service for risk assessment and exposure assessment-related matters (among others) around the globe, with offices in more than 20 locations in the United States, Europe and Asia. The following represents Exponent's unique insights in response to all eight (8) recommendations, as they relate to the mapping development and its creation and maintenance.

A. Mapping Development

(i) Description of the Food Category Systems

CCFA Discussion Draft CX/FA 23/53/15, Recommendation 1: The mapping of the FoodEx2 to the GSFA should use the **Exposure hierarchy**, given its focus on organizing foods specifically for exposure calculations, given that food consumption databases are already mapped to this hierarchy and given that a reference is available that may serve as a verification tool.

ICBA Comment on Recommendation 1 – It is clear the European Food Safety Authority (EFSA) has already mapped the Exposure hierarchy – a European tool – to food categories of Annex II (Part D) of Regulation (EC) No 1333/2008, and that European Union (EU) member states' (EUMS) food consumption databases have already been mapped to the FoodEx2 Exposure hierarchy. To better understand mapping that has already been completed, ICBA wonders whether JECFA has had the occasion to map other national food consumption databases from non-EUMS countries – for example, the Brazilian Dietary Survey Inquérito Nacional de Alimentação (INA) which is a component of the Pesquisa de Orcamentos Familiares (POF; Household Budget Survey 2017-2018) conducted by the Instituto Brasileiro de Geografia e Estatística (IBGE), the Canadian Community Health Survey – Nutrition (CCHS, latest 2015 survey), the Mexican

Instituto Nacional de Salud Pública (INSP) Encuesta Nacional de Salud y Nutrición (ENSANUT, latest 2018-2019 survey) or the U.S. National Health and Nutrition Examination Survey (NHANES) food consumption databases (latest 2017-2018 survey) – to the FoodEx2 exposure hierarchy as well. Doing so would provide the necessary global perspective for Codex standards.

Without a firmer understanding of how various national food consumption databases might be mapped to the FoodEx2 exposure hierarchy, this could be a source of misalignment from a global perspective. ICBA believes it may be premature for CCFA to definitively conclude that the FoodEx2 Exposure hierarchy should be utilized to not only map to the GSFA food categories, but for non-EUMS national food consumption databases to also be mapped to the FoodEx2 exposure hierarchy. It would be important to conduct a preliminary analysis across regions globally to assess the reliability of such an approach and its potential impact. ICBA would suggest that this preliminary exercise be conducted first to assess the applicability of this proposal before CCFA makes a decision to endorse the discussion draft Recommendation 1.

Thus, key questions for the Committee's consideration are:

- With the exception of the EU consumption databases having already been mapped to FoodEx2 exposure hierarchy, which other national food consumption databases from other jurisdictions have been (or will be) mapped to the GSFA-FoodEx2 categories? What are some of those learnings, highlighting similarities and differences across national food consumption database mappings?
- How/when will the national food consumption databases within the FAO/WHO global repository be migrated and associated with the presumed aligned GSFA-FoodEx2 categories?
- What opportunity exists to review such a linkage of the global database of national food consumption databases to these mapped GSFA-FoodEx categories? It may be worth conducting a couple of case studies (across regions globally) to 'test' the linkage as well.
- How often would this linkage exercise be conducted to ensure they reflect the latest changes to the national food consumption databases?
- What information would be available for download? Data submitters should have access to the entire folder of linked databases to the FoodEx2 exposure hierarchy so that they may be able to conduct intake assessments when preparing requests for consideration by JECFA.

(ii) Food Category Level Matching

CCFA Discussion Draft CX/FA 23/53/15, Recommendation 2: It is recommended that the GSFA be mapped to the level of the Core terms in the FoodEx2, where such terms are available; and where not available, to be mapped to the nearest higher-level term (usually a Nonspecific term). This degree of coding provides the minimum level recommended for the JECFA exposure assessors, but also provides some specificity that may be able to accommodate cases where limited foods within a food category of the GSFA are intended to be coded. Limiting the mapping to the Core terms instead of the Extended terms also has the advantage that fewer terms from the FoodEx2 need to be mapped to the GSFA. (Although there may be some cases where the use of the FoodEx2 core term may not be appropriate to account for specific food additive use-cases described in the GSFA, it is suggested that mapping to the most specific extended terms is too comprehensive for this exercise. Instead, the exposure evaluator may need to make case-by-case refinements based on the descriptions provided by the petitioner of the request to JECFA.)

ICBA Comment on Recommendation 2 – The document defined the following terms: *Non-specific terms* (graphically indicated by yellow spheres) are intermediate aggregated groups (e.g., "citrus fruit"), also used to navigate the food list. Even though they provide more specificity than generic terms, their use in coding should be limited to cases where more specific terms cannot be found. *Core terms* (graphically indicated by red spheres) provide yet a greater degree of specificity (e.g., "lemons and similar"), and are the minimum recommended level of specificity for coding. There are approximately 1300 core terms in the FoodEx2. *Extended terms* (graphically indicated by green spheres) provide the most specific information to the level of the general commodity (e.g., "lemon" or "citron"). There are approximately 2600 extended terms in the FoodEx2.

Having a consistent basis upfront to conduct assessments on those categories that align correctly with the GSFA provisions (i.e., the identified GSFA-FoodEx categories) would make practical sense. However, the challenges will be in the details of the initial mapping (at the higher level) and then the more refined mapping as needed.

The descriptions of "non-specific", "core" and "extended terms" are not routinely used when describing food categorization hierarchies. The food hierarchy in FoodEx2 is expressed as Level 1 to Level 7, with Level 1 being the most aggregated. Based on the "Grains" example provided in the Excel spreadsheets linked to the discussion document, 'Core' terms are mainly FoodEx Level 4 (with some foods at Level 5, and also some at Level 3). Most 'Core' terms for the grain example are at level 4. In general, based on Exponent's experience of having mapped from US NHANES to FoodEx and GSFA provisions (when conducting intake assessments for food additives for submissions), they are usually working at FoodEx Level 5.

Furthermore, there are many composite foods in FoodEx that will not directly align with the GSFA food categories. For example at FoodEx Level 5, there are foods such as ‘Sandwich with meat and vegetable’; or ‘Prepared pasta salad’. It is therefore unclear how JECFA would deal with these types of foods in the mapping. Contrary to the statement in Recommendation 7, which states ‘the mapping should be relatively straightforward’, Exponent doesn’t see this mapping as either simple or straightforward. Should CCFA proceed with this endeavor, every effort should be made to ensure it is done carefully, correctly, and accurately in the first instance, with a large degree of transparency describing decisions on alignments and inviting comments along the way to ensure the global perspective is considered throughout this process. Clear descriptions will ensure reproducibility in the mapping exercise when attempted to be conducted elsewhere.

Relative to “case-by-case refinements”, Exponent believes that the petitioners who have developed the additive to serve a particular function in specific foods should be given the opportunity for not only greater input into the suggested mapping refinements at the outset, but also to review and provide comments on any refinements made by JECFA. It is very important to acknowledge that, during the past decade, CCFA has endorsed the application of an ever-growing number of footnotes to limit and restrict GSFA food additive provisions to specific foodstuffs under certain conditions. After undertaking a preliminary exercise in food category level matching, CCFA may find that the level of specificity that now exists in the GSFA may not lend itself to the proper mapping of categories across systems.

B. Who should be responsible for conducting the routine FoodEx2 food list coding for requests made to JECFA?

CCFA Discussion Draft CX/FA 23/53/15, Recommendation 3: Subject to JECFA’s opinion, it is proposed that JECFA use the GSFA-FoodEx2 mapping and extensive clarifying information on relevant foods within the GSFA in order to develop FoodEx2 food code lists for their exposure assessments. JECFA evaluators are likely to have greater expertise and develop more consistent outputs.

ICBA Comment on Recommendation 3 – Recommendation 3 assumes that the initial mapping being discussed is robust enough to cover the range of food categories and additives that will be the subject of the JECFA call-for-data. To instill confidence in the initial mapping exercise, several validation steps across different non-EUMS national food consumption databases should first be performed, followed by the opportunity to vet the output by CCFA members and observers. Further, ICBA wonders what the requisite expertise should be to undertake the initial GSFA-FoodEx2 mapping exercise. In principle, having a dedicated group of experts handle and routinely manage the mapping should minimize differences in interpretation, approach and application. Nevertheless, input from petitioners on refinements to the initial mapping is critical, given their unique knowledge and expertise of food formulations and what foods are/aren’t in-scope of a requested use.

C. Format, location and accessibility of the mapping

CCFA Discussion Draft CX/FA 23/53/15, Recommendation 4: It is recommended that the initial iteration of the mapping be a simple tabular document that shows the food associations. The creation of quality-of-life refinements such as automated report generation is not critical to the current task and can be left to future developments, perhaps by the users of the mapping.

ICBA Comment on Recommendation 4 – Should the GSFA-FoodEx2 mapping be realized in the future (after being sufficiently assessed to instill confidence in its utility, applicability and relevance), ICBA would support ‘Option 3’ a user-friendly tabulated document to be posted on the Codex Alimentarius website as a miscellaneous information document. It would be important for the petitioners or data submitters to have access to the updated versions as they prepare their respective submissions, and have the ability to copy-and-paste, or download the excel spreadsheet, analogous to how the WHO Global Environmental Monitoring System (GEMS) Foods database is presented. This process would enable real-time verification of the food codes and invite any clarifying questions on the match/mapping (if any) for JECFA’s consideration. Learnings from the WHO GEMS/Foods database useability should be brought to bear here when considering the GSFA/FoodEx2 mapping exercise.

CCFA Discussion Draft CX/FA 23/53/15, Recommendation 5: Pursuant to Recommendation 3, that the Committee agrees that the initial mapping could remain as an internal reference document for use by JECFA. Further elaboration of the functionality or public hosting of the mapping could be left to the discretion of JECFA. Alternatively, if the Committee decides that the food coding should be conducted by petitioners who submit requests to JECFA, then the mapping should be a publicly available document. In this case, the Committee should also agree on which group or organization should develop options to host the mapping and any accompanying documentation (e.g., assumptions made; decisions taken).

ICBA Comment on Recommendation 5 – As mentioned previously, the most important element to this mapping exercise is that it is tested across non-EUMS national food consumption databases first, with a few case studies undertaken to assess the efficiency, effectiveness with which the desired foodstuffs within any

particular GSFA food category may match up with the FoodEx2 before the relevance of the mapping can be evaluated by then completing an intake assessment. The work-product should of course be subject to careful review by Codex members and observers alike, and made publicly available so that comments, suggestions and feedback are encouraged and invited. Only after a robust review process, in which the structure has been shown to generate assessments that make sense (by comparing to available assessments that did not use this system), is it appropriate for CCFA and JECFA to consider its endorsement.

Further, JECFA should also be able to refine the mapping (if needed) provided there is a well-defined process and timeline for data submitters/petitioners to provide feedback on those refinements prior to any assessment, with JECFA's ultimate decisions disclosed post-assessment and documented for transparency purposes. Doing so will ensure assumptions are clearly recorded, and are based on accurate information with a correct understanding of the intended use of the food additive in the anticipated food categories.

D. Creating the initial mapping

CCFA Discussion Draft CX/FA 23/53/15, Recommendation 6: The Committee should endorse a Member or Members to prepare the initial mapping, to be available by the end of 2023.

ICBA Comment on Recommendation 6 –The proposed timeline to complete the mapping exercise before end of 2023 is overly ambitious considering the complexities associated with mapping FoodEx2 Exposure hierarchy categories (based on food consumption data requirements) to GSFA food categories (which have an excessive number of footnotes that further restrict conditions of use, for example, to specific functional classes). Also, what type of department/office within Codex members' national codex contact point would have the requisite expertise to be responsible for mapping the various national food consumption databases to the FoodEx2 Exposure hierarchy to ensure JECFA is able to conduct a global intake assessment?

The comments provided on previous recommendations have highlighted the need for the initial mapping exercise to be completed accurately and in an open and transparent manner. It would be beneficial for interested parties to be invited to contribute to the development of the mapping of categories, with an opportunity to review the outcome. This should then be followed with several case studies to evaluate whether the mapping was done correctly, prior to its endorsement by CCFA and its adoption by JECFA.

CCFA Discussion Draft CX/FA 23/53/15, Recommendation 7: In order to meet the timeline proposed in Recommendation 6, it is recommended that the initial mapping not be further scrutinized by the Committee during CCFA54. Such scrutiny should not be needed as the mapping should be relatively straightforward, and documentation (notes) will be available that accompany the development of the mapping and all assumptions made. Furthermore, should an interested party identify weaknesses in the mapping, the mapping can be updated as needed.

ICBA Comment on Recommendation 7 – As has been stated for other recommendations, the initial mapping should be conducted more openly and explicitly with a robust review and validation process before the endorsement by CCFA members and then adoption by JECFA. Exponent has done many of these mapping exercises previously, including mapping FoodEx2 to GSFA for its own purposes, and has found that this proposal is not as straightforward or simple as is being conveyed here in the discussion draft CX/FA 23/53/15.

The hope is that this initial mapping exercise would lead to the creation of a standardized GSFA-FoodEx2 category system which would then promote consistent allocation of foods for dietary exposure assessment purposes. However, this concept has not yet been tried and tested with case studies, such as key food additives that have well-established intake assessments across numerous national food consumption databases beyond the EUMS food consumption databases. It is not ideal – nor should it be recommended – to begin to create such a novel system and yet to expect that it also be applied and used in parallel to inform the risk assessment decision-making process. The output could be misleading without a deeper understanding of this system's utility, applicability and relevance, and adjustments after the fact would do little to rectify past misinformed decisions that emanated from underlying weaknesses (or incorrect assumptions) that were not readily apparent before. As an analogy, there are many lessons to be learned from the ongoing exercise at the Codex Committee on Contaminants in Foods relative to data collection/submission, analysis and presentation using the WHO GEMS/Foods database. CCFA should undertake this work in a measured way to ensure missteps are minimized or avoided, to the extent possible.

E. Process for updating the mapping

CCFA Discussion Draft CX/FA 23/53/15, Recommendation 8. The Committee should determine who should be responsible for updating the GSFA-FoodEx2 mapping when either system is updated. If CCFA will be primarily responsible for all updates, additional discussion on the procedures and level of work may be needed in a subsequent discussion.

ICBA Comment on Recommendation 8 – Any update – no matter who has been designated to perform such a task – should be subject to peer review with comments solicited and should be made accessible on the Codex Alimentarius website. JECFA would be in the best position to maintain this system as they are monitoring changes to the national food consumption databases, the FoodEx2 coding, etc. JECFA would already have the responsibility to review, assess and refine certain categories during individual evaluations. For consistency going forward, when a categorization of a particular food is refined – with agreement between JECFA and the data submitter/petitioner – these refinements should be documented and the GSFA-FoodEx2 categorization system updated accordingly (if this is the system the CCFA wishes to proceed with).

I. Conclusion

ICBA welcomes CCFA's efforts in seeking harmonization for its international general standard for food additives. ICBA thanks the CCFA for taking the above comments into consideration as these and other important matters are further deliberated. ICBA very much looks forward to actively participating in CCFA's upcoming physical working group and Plenary sessions.

We thank you in advance for taking these comments into account.