**Establishment of the Trait Dictionary**

Well documented Trait Dictionary for breeding is being established through the following processes

1. Initial Trait Dictionary - an initial list is created and compiled in collaboration with the IBP Use Cases and GCP Research Initiatives.
2. Translation to English - English is the chosen language to be understood by wider community. Trait Dictionary submmited or obtained in other languages is translated to English.
3. Validation – Duplicate and redundant traits are identified and the descriptions are made clear and complete. This is done in consultation with 5 or 10 breeders within the crop community
4. Ranking – The traits are ranked according to frequency of use to breeding. The ranks used are 1- always used for breeding, 2= sometimes, 3 = seldom, and 4 = never.
5. Analysis – The list of 50 important traits for breeding is finalized in consultation with the community of breeders based on the given ranks.
6. Complete Documentation – The finalized list of traits is farther documented to include measurement protocols, scales or units and data standards.
7. Synchronization  – The final list of breeding traits is checked and synchronized with the crop central database to be readily available for use in the IB Tools such as Fieldbook.  The trait dictionary will also be loaded into the Bioversity Ontology system

**Initial Status of the Trait Dictionary**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Crop | Number of Traits | Who created/submitted the Trait Dictionary? | What language? | Source | In the Crop Ontology? |
| Beans | 76 | TL1 Bean Grp led by Matthew Blair,  2010 TL1 Meeting | English | 1. CIAT, 1987 2. Singh et al, 1991 3. Rao, in prep 2010 | Not yet |
| Cassava | 122 | Peter Kulakow | English | IITA, CIAT, NRCRI | Yes |
| Chickpea | 82 | Pooran Gaur,  Asnake Fikre (EIAR),  L Krishnamurthy,  Mahendar Thudi,  L Krishnamurthy | English | 1. IBPGR/ICRISAT/ICARDA. 1993. Descriptors for Chickpea, 2. ICRIS | Yes |
| Cowpea | 265 | Jeff Ehlers, Boukar Ousmane | English | 1. V. Mahalakshmi et al, Pl Gen Res: Char&Utilization, Vol. 5, NIAB, 2007; 2. Muchero et al., 2010; 3. Singh et al, 1997; 4. Pottorff, 2009 5. Roberts et al, 2000 6. Omwega et al., 1992 7. Hway-Seen et al 2008 8. Murdock 2003 | Not yet |
| Groundnuts | 67 | TL1 Groundnut Group led by V. Vadez,  2010 TL1 Meeting | English | ICRISAT/ISRA/DARS | Yes |
| Maize | 165 | CIMMYT | English | Maize Fieldbook, IMIS | Yes |
| Rice | 160 | IRRI |  | SES Manual, IRIS | Yes |
| Sorghum |  | Niaba Teme | French | Alencar et al. 2006 | Yes |
| Wheat | 171 | CIMMYT | English | International Nursery Trial, IWIS | Yes |

**Processes to complete the Trait Dictionary for breeding**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Crop | GCP coordinator | Translated to English  (Date) | Validation/  Documentation of the traits  (Date) | Ranking of the Traits  (Date) | Analysis of the Ranking  (Date) | Complete Documentation of Protocols, Scales and Standards for Priority Traits | Synchronization with the database |
| Beans | Ndeye Ndack | Done | Claire Mukankusi  **(end of Nov)** | Claire Mukankusi  **(Jan 15, 2011)** | Ndeye & Steve  **(Jan 30, 2011)** | Steve B, Claire M & CoP  **(End of February 2012)** | GCP-DM, Alberto  **(March 15, 2012)** |
| Cassava | Larry | CIAT traits to English - Luis (Graham/Arllet) | Peter K, Mashood, Emmanuel Okogbenin  (~**Dec 15?**) | Emmanuel O et al, (~ N**ov 16**) | Larry & Emmanuel O  (~**Nov. 21**) | Peter K, Emmanuel O, et al  (~**Jan 15, 2012**) | GCP-DM, Fernando (~**Jan 30, 2012**) |
| Chickpea | Rajeev | Done | Pooran with TL1, TL2 and Indian partners |  | Rajeev & Pooran |  | GCP-DM, Prasad |
| Cowpea | Graham | Done | Jeff, Boukar & CoP  **(Nov 30, 2011)** | Jeff, Boukar **(Dec 10, 2011)** | Graham & Ndeye  **(Dec 30, 2011)** | Jeff, Boukar **(Jan 15, 2012)** | GCP-DM, Sam Ofodile  **(Jan 30, 2012)** |
| Groundnuts | Larry | Done | Emmanuel M, Bonny N et al | Emmanuel M, Bonny N et al **(~Nov 30)** | Emmanuel M, Larry  **(~Dec 10)** | Emmanuel M, Bonny N  **(~Jan 15, 2012)** | GCP-DM, Prasad  **(~Jan 30, 2012)** |
| Maize | Jean-Marcel | Done | Done | James Gethi-GCP RI, CIMMYT, Syngenta  **(Nov 15, 2011)** | Jean-Marcel & James G. | Akinnola Akitunde with the Maize CoP | GCP-DM, Claudio Ayala |
| Rice | Xavier | Done | Done | Arvind Kumar, Venuprasad | Xavier and Nour | Arvind, Nour | GCP-DM, William |
| Sorghum | Ndeye Ndack | - Translate Niaba’s Traits - Niaba | Niaba’s traits against ICRISAT list - Eva | Eva with Embrapa, University of Queensland, Moi University, ICRISAT India, Makerere University and ACGT  **(End of December)** | Eva & Ndeye  **(3rd week of January)** | Eva & CoP  **(3rd week of February)** | GCP-DM, Praveen  **(March 10, 2012)** |
| Wheat | Delphine | Done | Validate Richard’s traits - Rosemary | Richard Trethowarn | Richard & Delphine | Richard Trethowarn  **(early February 2012)** | GCP-DM, Jesper |