



Minutes of WHEAT Management Committee (W-MC) Meeting,

3rd and 4th Dec 2015, virtual

W-MC Members present: Marianne Banziger (CIMMYT), Andrew Noble (ICARDA, Co-Chair), Michael Baum (ICARDA), Hans-Joachim Braun (CIMMYT, **Chair**), Olaf Erenstein (CIMMYT), Bruno Gerard (CIMMYT), Graham Moore (BBSRC), Eric Huttner (ACIAR), Kevin Pixley (CIMMYT), Michelle Guertin (CIMMYT)

Apologies: Indu Sharma

Other participants: Victor Kommerell, Nina Jakobi

Item		Documents provided
	Members arrive / call in	by 11 Nov
	Thu, 3rd Dec	
0	Welcome, Approval of Agenda & Minutes (Hans)	
6:00	<ul style="list-style-type: none"> ▪ Official welcome Andrew Noble ▪ Approval/Amendments to Agenda ▪ Formal Approval of Meeting Minutes 	Agenda Minutes
1	Update Briefings	
6:15	<ul style="list-style-type: none"> ▪ Updates: <ul style="list-style-type: none"> ○ IWC2015 Partner Feedback on W-Phase II (What WHEAT should no longer do) ○ Update on progress towards One CGIAR Global Wheat Program (Hans) ○ Updates on HeDWIC, IWYP, Phenotyping Platforms, Global Wheat Adoption Study (Hans) ○ Any other business 	1A 1B 1C
2	WHEAT Budget/Finance	
6:30	<ul style="list-style-type: none"> ▪ Budget 2015 status (budget vs spend): Potential for re-direct/commit to 2016 (Vic) ▪ Budget 2016 scenarios: Likely W1&2 income, budget allocation options, status likely bilateral income, W-ISC recommendations to W-MC on belt-tightening (Vic) <ul style="list-style-type: none"> ○ Decision which 2016 budget to endorse 	2A 2B
3	WHEAT Phase II	
7:30	<ul style="list-style-type: none"> ▪ Update on ISCP review of pre-proposal, CB/FC decision, Full Proposal guidance, updated proposal development timetable (Vic) ▪ Briefing on W-ISC recommendations regarding Full Proposal content ▪ W-MC decisions regarding Full Proposal development, content: <ul style="list-style-type: none"> ○ Focus of inter-CRP collaboration (must have, nice to have if funded) ○ Strategy regarding mix of discovery vs downstream investments, to maintain pipeline ○ What will be integrated in WHEAT from Dryland Systems? ○ Scaling out FP or not? How to integrate into FP3&4? ○ Focus of CoA3.5 (nutrition & health) ○ Regarding Full Proposal Guidance ○ Other? 	3A tabled 3B, 3ADD
9:00	Close of 1st day meeting	



	Fri, 4th Dec	
4	WHEAT Governance & Management	
6:00	<ul style="list-style-type: none"> ▪ IEA External Evaluation & BMGF-funded CIMMYT Breeding Review: Status follow-up and W-ISC recommendations – (Hans/Michelle) ▪ CGIAR Internal Audit Unit (IAU) audit of WHEAT, W-ISC response to recommendations, Lead Center BoT response: Update and identify need for action (Vic) 	4A Verbal
5	CRP Monitoring and Reporting	
6:30	<ul style="list-style-type: none"> ▪ Proposal on key content for CRP Annual Report 2015 (Hans) <ul style="list-style-type: none"> ○ W-MC decision on priority key content ▪ Draft Program of Work and Budget 2016 (Vic) <ul style="list-style-type: none"> ○ W-MC guidance on finalizing POWB 2016: Invest W1&2 in what exactly? ▪ Any other business 	5A 5B
6	Results-based Management Framework for Phase II	
7:30	Presentation by Michelle <ul style="list-style-type: none"> ▪ Purpose, elements, CO requirements ▪ How RBM relates to ToCs; what each CRP must describe in Full Proposal ▪ Cross-CRP work on ME&L 	
7	WHEAT-MC related matters	
8:00	<ul style="list-style-type: none"> ▪ Membership issues (Indu Sharma retirement) ▪ Review, endorse W-MC/W-ISC calendar 2016 (Vic) ▪ Agree on next meeting given Phase II timetable (March 11? Between Nov 15-30?) ▪ Any Other Business 	verbal 7A
9:00	Close of meeting (estimated)	

Meeting documents:

<https://www.dropbox.com/home/WHEAT-MC%20December%203%204%202015%20Meeting%20Docs#>



Decisions and To Do List W-MC Dec 2015

Green = done; Yellow = in process; Red = Delayed

What	Who	With whom	By when
Agenda Item 1 Update Briefings			
<p>Key discussion points:</p> <p>IWC2015 partner feedback on 'What WHEAT should no longer do': Quite similar to previous partner consultations. W-MC noted the inherent bias towards FP2&3 due to the disciplinary background of most IWC2015 attendees.</p> <p>One Global CGIAR Wheat Program: Small grant funds to facilitate collaboration not used, as BMS implementation moved to 2016. Integrated data mgmt remains big challenge. FP1 collaboration is functional. Iran impact study realization dependent on sanctions being lifted early 2016. Recent collaboration on joint proposals (Iran, AfDB FeedAfrica), more could be done.</p> <p>HeDWIC: G-20 Wheat Initiative about to endorse as high priority (Jan 2016), giving donors such as GRDC strong argument to advocate funding. Plan to send out research plan to select donors early 2016.</p> <p>IWYP: 1st round of competitive grants approved. Of 8, CIMMYT is involved in 5 as implementation partner. GRDC has stepped up as co-funder, more donors likely in 2016.</p> <p>Phenotyping Platforms: No additional platforms in 2016, due to lower W1&2 compared to Extension Period Proposal. Opportunity for progress in Morocco, due to ICARDA use of NARS stations & decentralization budget; also in Ethiopia.</p>			
Attach 'One Global Wheat Program' assessment of milestones achievement in 2015 to WHEAT-MC Minutes – see Annex below, pp.7-9	Braun	Victor	14 th Dec
Identify opportunities for streamlining ICARDA and CIMMYT R4D support to Kulumsa research station (Ethiopia)	Braun, Baum	Tadesse, Abeyo	Mid-Jan 2016
Find out status and future of East African Agriculture Productivity Project post-2015 (managed by ASARECA, World Bank loan) and implications for funding of Kulumsa research station	Victor	Abeyo, ASARECA	Mid Jan 2016
Agenda Item 2 – Budget/Finance			
<p><u>Decision re: updated W1&2 Budget & Partner Budget 2015: WHEAT-MC agreed to (including Indu Sharma per email)</u></p> <p>1. Re-allocate budget to 3 projects (CIM-Cap Dev; SNP Platform YR3, pedigree.net) as proposed by CRP Director in Briefing 2B p.3.</p> <p><u>Decision re: updated W1&2 Budget & Partner Budget 2016: WHEAT-MC endorsed</u></p> <p>2. Scen2 (as in Briefing 2B p.2) if Consortium Board approves Scenario 2 for 2016 on 14th Dec., otherwise endorse Scen1.</p> <p>3. The proposed allocations under Partner Budget 2016</p> <p>4. In addition, to combine CIMMYT and ICARDA annual contributions to Aarhus global rust reference center of 20k each into a 40k WHEAT contribution in 2016 partner budget.</p> <p>5. That ICARDA verify whether WHEAT payment to CAC-PAU Tashkent Office is in line with CGIAR Financial Guidelines and that CAC-PAU consider alternative options for funding in Phase II</p> <p>6. That CRP Team verify cost savings under CRP Mgmt Budget 2016, which could be deployed 1st quarter 2016 for special studies related to Full Proposal development and preparation for Phase II more generally – in</p>	Victor	Claudia, Ramiro	Before year-end closing
	Claudia	Finance	
	Michael	Jozef	End Jan 2016
	Victor	Claudia	ASAP

<p>other words, reduce WHEAT Mgmt Budget from Scen2 1.9M. Also verify whether there will be savings/lower spend compared to W-MC endorsed CRP Mgmt Budget 2015.</p>			
<p>Joint CIMMYT-ICARDA SNP Platform of diagnostic markers to characterize germplasm, KASPAR-based: Identify opportunities for collaboration (synergies, coordination) 2016ff with France and UK researchers big-k SNP chips, including sharing of same set of diagnostic markers, avoid duplication, assure open access to data (given that private sector is involved in UK/F projects). Noted that ICRISAT implementing similar strategy to WHEAT, with 50-100 marker chips per plant.</p> <p><u>Background info:</u> Keith Edwards, Univ of Bristol: Axiom 35k breeders array with markers covering critical hexaploid diversity & WISP 817k chip http://investor.affymetrix.com/phoenix.zhtml?c=116408&p=irol-newsArticle&ID=1890005</p> <p>Etienne Paux, INRA, BreedWheat: TaBW420K genotyping chip; 280,000 SNPs available to third parties for both research and breeding purposes. A genetic map of 307k SNPs is done. http://www.breedwheat.fr/file/BW_Booklet%20WP1%20def.pdf</p>	Braun	Susanne, A	ASAP
<p>Provide ideas for special studies or projects that could be completed within 2016, in preparation for Phase II and/or in support of Full Proposal development; consider IEA External Eval recommendations, which require add'l budget SEE SEPARATE DOC; see also CIMMYT-ICARDA quick win collaboration ideas, listed below, pp.10-12.</p> <p>Ideas mentioned in the discussion: IASA/partners start to develop metrics/indicators for sustainable intensification; How should WHEAT change or expand its research scope with respect to the nutritional implications of agrifood systems?; Follow-up on Global Variety Release and Adoption Study: What if no AR4D investment?)</p>	All W-MC member	Victor	18 th Dec
<p>Agenda Item 3 – WHEAT Phase II</p> <p>Key discussion points:</p> <p>Members were updated on status of Phase II CRPs Portfolio, review of WHEAT Pre-Proposal, Full Proposal Guidance. As part of all-CRP effort to “refresh portfolio” by reducing # of FPs, WHEAT offered to merge its ‘C’-rated FP5 into FP3&4. However, “refreshed portfolio” proposal to FC with 55 FPs includes WHEAT FP5.</p> <p>Full Proposal Guidance (2nd draft) still too prescriptive and demanding too much detail in some areas. M&E&L Community of Practice proposals not taken up by CO so far. Graham informs that UK online proposal submission system is functional. Question is, will it be for Consortium?</p> <p>Dryland Systems into WHEAT FP4 Phase II: Some mapping of projects has been done, will be continued during Dec 15-17 workshop.</p> <p>W-ISC recommend to more strongly feature work on nutrition and health (Shewry report; genetic improvement & quality research) in Full Proposal: Donors want to see systematic approach to nutritional food security, along the value chain. Key issue: What can FP1&4 take on/deliver with regard to a systematic approach to nutrition (e.g. how to integrate into value chain analysis, systems research approach).</p>			
<p>Decision: WHEAT-MC endorses that development of Full Proposal by March 30th be done involving Cluster of Activity (CoA) leads, who shall work together virtually to update/write relevant sections. Aim for 1st draft Full Proposal by end January (see W-MC/-ISC Calendar2016: - 1st W-ISC review last wk Jan – 2nd wk Feb</p>	Hans, Victor	CoA Leads	Ongoing until mid-March



<ul style="list-style-type: none"> - Mid-Feb – mid-March: non-CG partner consultation - W-MC final review and sign-off around 11th March 			
<p>Ask Karen Brooks (PIM) to gather and consolidate CRPs feedback to 2nd draft Full Proposal Guidance, input with track changes to increase chances that top priority changes/simplifications are accepted by CO, which must send 3rd draft to CB on 11th Dec.</p>	Victor	Karen	Done 8 th Dec
<p><u>Decision:</u> Contents of FP5 to remain in Full Proposal, even if integrated as separate CoAs into FP3&4. Feature the strategic p’ship with GIZ on scaling-out in Phase II (to be detailed/finalized). Full Proposal to make clear, also in budget section (e.g. uplift budget) what WHEAT would do and be able to achieve, if it had more strategic funds (W1&2) for scaling-out. Make clear the difference between “supplementary” bilateral projects mapped to WHEAT but not included in its total proposed budget and non-CRP projects.</p>	Victor	CoA lead writers	By 22 nd Jan
<p><u>Decision:</u> Make reference to nutrition and quality in the relevant FP titles</p>	Hans	W-MC	By 11 th March
<p>Agenda Item 4 - WHEAT Governance and Management</p> <p>Key discussion points:</p> <p>Michelle and Hans updated on how progress on IEA External Eval recommendations is tracked and status. W-MC recommends to use numbers and remove % in progress reporting.</p> <p>W-MC was briefed on W-ISC review of CGIAR-IAU audit of WHEAT and its findings, recommendations. Notes that W-ISC agrees with recommendation to implement a distinct CRP-related conflict of interest policy, based on the current ICARDA and CIMMYT ones.</p>			
<p><u>Decision:</u> WHEAT-MC endorses hiring ASAP additional budgeting/financial control expert in Lead Center Finance Dep’t, with a dotted line to CRP Director, to increase capacity for financial monitoring. CRP Team is asked to adjust WHEAT Mgmt Budget 2016 accordingly.</p>	Hans	G. Sim, Ramiro Tovar, Finance	By mid-Jan
<p>Agenda Item 5 –CRP Monitoring and Reporting</p> <p>Key discussion points:</p> <p>W-MC identified a number of further topics (CCAFS/FP4 story; H+) to be featured in annual progress reporting (to CO and to larger audience via website and other channels) and confirmed the proposed selection of ‘success/progress stories’. A publications list will be added again to the AR-to-CO. Use of W1&2 in terms of results achieved 2015 should be especially featured.</p>			
<p>Members to review and edit the draft POWB2016 after CB decision on CRP budgets 2016 (14th Dec). As POWB does require breaking down total budget (not by funding stream) to FP and CoA levels (confirmed by CO on 7th Dec), review exercise to include bottom-up definition of deliverables by FP Leads/Program Directors and project leads concerned, in particular for W1&w-funded activities.</p> <p>Members to verify what can be delivered in 2016 with CB-endorsed W1&2 (Scen2 or Scen1) and expected bilateral budgets.</p>	Victor	W-MC members	Amended template, by 8 th Jan latest
<p>Agenda Item 6 – RBM Framework for Phase II</p> <p>Key discussion points: W-MC recommends to have M&E&L activities necessary to implement CRPs funded per CRP and not as a special initiative hosted in the CO/System Office;</p>			



focus on what most donors really want from ‘accountability’ M&E, e.g. ex post impact studies such as DIVA, WHEAT global variety release and adoption study, as well as success stories;
 determine need for baselines and what investment would be required for this;
 push for AFS-CRPs using the same or comparable metrics and/or indicators to track progress towards subIDOs, perform baselines, use M&E as a program management tool.

Agenda Item 7 – WHEAT-MC related matters / AOB

Draft letter to Ayapan to request new ICAR member for WHEAT-MC, have Indu review letter first. Indu officially retires 1st week January and there is so far no news about a successor.

Hans

Indu

Before year end

WHEAT-MC meeting dates 2016 will be:
 11 March, virtual: Full Proposal finalization; Review, adjust, approve 2015 work plan FP/CoA-level; Assign Partner Budget (if available)
 Between 15-30 Nov, ICARDA location, most likely Rabbat, Morocco: work planning for Phase II 2017-18; budget 2017; possibly Gov&Mgmt adjustments

All members note

AOB: Consider organizing an FP2-3 write-shop or similar as side meeting during PAG around 9th Jan

Hans, Kevin

Michael

ASAP

AOB: Eric to raise with Nick Austin ACIAR: Need for broad definition of ‘strategic use’ of W1&2 by CRPs & Full Proposal Guidance needs to be less prescriptive, more focused on contents of a proposal (as opposed to a project proposal or program’s annual work plan)

Eric

Nick

ASAP



Reporting to both Boards on establishing 'One Global CGIAR Wheat Program'

Status: Dec 2015 - Endorsed by both Boards in April/May 2015

2014	Milestone	Verification
Dec	CIMMYT ICARDA wheat scientist (40) meeting on establishing One Global CGIAR Wheat Program completed: Agreement on organization/collaboration practices 2015-16 (key roles & responsibilities for CRP leadership, Cluster of Activities Strategy Lead) and win-win collaborative activities (as basis for prioritization & joint work planning and budgeting) Capacity assessment done: Document CIMMYT & ICARDA FTE's per region, FP; identify minimum capacity levels, capacity gaps and determine how to fill (either through W1&2 or W3/bilateral-funded projects)	Meeting documentation; action plan
Dec	WHEAT global wheat partners provide input on R&D scope and partnerships (WHEAT Ambition) during Phase II (2017-21):	Minutes
2015	YR1 Pilot	
Feb-March	Finalize agreement on Clusters Of Activities Strategy Focal Points: Assign staff; provide small support budget per Lead (WHEAT-MC decision 18-19 th March)	CRP Director email to all WHEAT scientists
March	MoU CIMMYT-ICARDA discussed, finalized by WHEAT-Management Committee CIMMYT and ICARDA DG finalize MoU	MoU document
March-April	Both BoTs discuss and endorse CIMMYT-ICARDA MoU; consider milestone plan & receive milestones progress report	BoT agenda & minutes
June	WHEAT DRYLAND SYSTEMS collaboration action plan 2015-16 agreed (on basis of WHEAT Flagship Project 4 workshop on impact pathways and theories of change, end March)	Joint work plan agreed
April - Aug	WHEAT-Management Committee plus CIMMYT, ICARDA senior scientists (CoA Strategy focal points) develop Phase II Proposal, including impact pathways and theories of change; CoA Strategy focal points engaged in all of Phase II, will receive small budget (meetings, similar)	Draft Phase II proposal
June-July	Based on scientists' input, CoA strategy focal point ToR to include ground rules peer-to-peer cooperation on WHEAT agreed , applicable to 2015-16, for endorsement by both DGs CoA Strategy focal points facilitate joint work planning for 2016 (to be finalized latest at IWC Sydney, Sept 2015 – all FP2&3 scientists will meet there)	Doc shared with WHEAT scientists
Sept-Oct	WHEAT-ISC reviews CRP Director ToR / Hans Braun appointment and provides advice to CIMMYT BoT WHEAT-ISC, both BoTs briefed on WHEAT progress, 1 CGIAR Wheat Program implementation progress	Agenda, briefing doc, minutes – W-ISC delayed to early 2016
Nov-	WHEAT-MC monitors progress of 1 CGIAR Wheat Program	2016 work plans



Dec	implementation, sets work plan & budget for 2016	to W-MC W-MC Minutes
Dec	<p>Joint evaluation of quick-win activities in 2015: Joint seed multiplication at NARS level of best entries in CIMMYT, ICARDA and NARS nurseries for inclusion in National Yield Trials, to cut the time from CGIAR lines entering national registration trials by 2 years; using CAIGE approach as model.</p> <p>Routine early exchange of material; yield trials and international nurseries routinely analyzed at both centers; rapid data exchange Analysis, compiling and publishing CIMMYT and ICARDA International Nursery Data and providing data to NARS co-operators – IBP - on one Portal</p> <p>Regeneration of CIMMYT wheat wild relatives by ICARDA in Lebanon; of ICARDA landraces for DNA and grain, by CIMMYT in Mexico</p>	Report
Dec	Publish CRP WHEAT in languages other than English and develop a communication strategy for joint fund raising	Publications; strategy document
2016	YR2 Pilot	
Jan- March	Joint offices and close coordination of all WHEAT-related activities in 2 countries operational (Iran, Pakistan, Ethiopia or Afghanistan; tbd) OR Joint focal points in regional offices for WHEAT where CIMMYT and ICARDA have offices - Afghanistan, Iran, Pakistan (Ethiopia hosted by ILRI and in Turkey office is shared)	Contracts signed
Starts Feb	<p>International Nursery evaluation at NARS stations done irrespective of origin of nursery (CIMMYT scientists evaluate CIMMYT and ICARDA nurseries and ICARDA scientists do the same)</p> <p>Make Breeding Management System (BMS) standard for data collection / analysis at both Centers</p> <p>Interoperable data sharing, web enabled, between CIMMYT and ICARDA</p> <p>Easy to use Excel based macro program that allows international nursery data analysis (developed by Z. Zehel) is distributed to CIMMYT and ICARDA co-operators and NARS scientists trained</p> <p>ICARDA's entomology program takes lead in screening accessions for resistance identify biotypes and develop molecular markers</p> <p>Jointly organized courses / workshops initiated</p>	<p>Data exchanged</p> <p>BMS use</p> <p>Data shared</p> <p>NARS use macro</p> <p>Publications</p>
Feb- March?	Phase II Proposal goes to Consortium	
March- April	Both BoTs consider 1YR progress on One CGIAR Wheat Program implementation	CRP Dir report at BoT meet
Sept- Oct	CGIAR donor (FC) decisions on Phase II proposals. CGIAR donors recognize success of One CGIAR Wheat Program as example of inter-Center collaboration and reward with +33% W1/2 funding for 2017 compared to 2014 (e.g. 15.75M + 5.25M)	FC decision on Phase II funding
Sept- Oct	WHEAT-ISC & BoTs briefed on One CGIAR Wheat Program implementation during Phase II (in context of CB/FC decision);	CRP Dir report



	consider options for changed joint governance at BoT level	
Nov-Dec	Lead coordination and implementation roles and responsibilities for 2017-19 (Phase II) agreed (may include non-CGIAR partners)	documentation
2017	YR3 Full implementation	
Jan-March	FIGS- and GBS- defined trait subsets established and distributed for hub and collaborator precision phenotyping Gap analysis (geographic/GBS) in CIMMYT & ICARDA genebanks done; collection missions and/or accessions from other gene banks initiated	Sets defined, ready for distribution
Jan-March	One CGIAR Wheat Program fully operational , with joint budget, staffing and work plan under unified cross-Center leadership	
Starts Feb	CIMMYT & ICARDA consider distribution of best-of-best lines 2-3 years running (not changing entries) to middle-weaker NARS, with that trial serving as national variety evaluation trial.	Nursery distributed
March-April	Both BoTs review full implementation and decide on changes to joint governance	
June	Joint offices and close coordination of all WHEAT-related activities in 1-2 further countries operational	
July-Sept	R&D partner feedback on One CGIAR Wheat Program gathered and analyzed	
Sept-Oct	WHEAT-ISC & BoTs briefed on One CGIAR Wheat Program implementation and partners' feedback	
2018	YR4	
Jan-March	Joint nurseries for specific traits / germplasm initiated Trait and species focused pre-breeding programs	Nurseries distributed;
March-April	BoTs: Tbd	
Sept-Oct	BoTs: Tbd	



Ideas for 'win-win' collaboration from ICARDA-CIMMYT Meeting, December 2014

Collected pre-meeting, as basis for discussion in-meeting

- Early exchange of material
- Regular exchange of international nurseries / yield testing
- Analyzing, compiling and publishing International Nursery Data and providing data to NARS cooperators – IBP. Zakaria Zekhel has developed an easy to use Excel based macro program that allows international nursery data analysis
- Standardize data format for international nurseries
- Better coordination of International Nursery Shipments and evaluation of nurseries. Both centers send nurseries often to same countries and in any of these countries either CIMMYT or ICARDA has based staff. Until now, CIMMYT scientists took notes in CIMMYT nurseries, and ICARDA staff in ICARDA nurseries. Either ICARDA or CIMMYT scientists could evaluate all material and share data
- Expand joint training courses
- Regeneration of and multiplication of alien species in CIMMYT gene bank in Lebanon
- Wide crosses with alien species that can't be grown outside greenhouses / quarantined area
- Appoint focal point for wheat in regional offices where CIMMYT and ICARDA have staff based.
- Analyze quality of ICARDA lines for traits that require special and expensive equipment
- Joint research projects – Karim and Philippe have submitted one
- IWWYP Turkey;
- Yellow rust testing Izmir and stem rust in Kenya
- Phenotyping Platforms

- Strong pre-breeding program that can generate good sources of pre-breeding materials for both ICARDA and CIMMYT wheat programs can be established.
- Development based projects such as seed multiplication and diffusion at NARS levels, example in Ethiopia, Pakistan etc , could be to be merged. Such similar activities shall be developed jointly to bring better impact in the future too.
- Richard, Ravi and myself have agreed for a common hybrid wheat project led by Richard
- The CAIGE project is a fantastic model to follow at NARS level. NARSs need to be encouraged to put both ICARDA and CIMMYT nurseries side by side, make the best selections out of it and utilize accordingly.
- Common projects for insect resistance, drought tolerance and yield potential can be initiated. We have a common project with Pawan Singh of CIMMYT on Karnal bunt resistance with GRDC support.
- It will be helpful to have a strong genomic selection program which can serve the breeding programs at CIMMYT and ICARDA
- Molecular marker technologies can also be shared and net-worked
- Undertake common review and scientific meetings. This might help to share experiences and strengthen collaborations on a complimentary basis.
- Impact and adoption studies; modeling and prediction studies, etc can be coordinated.



- I kindly suggest you and Hans to discuss on the FPs, activities under each FPs and respective leadership as this has been the request of the WHEAT CRP reviewers.
- We propose the following activities for wheat insects:
 - Phenotyping germplasm for resistance to key wheat insects in hotspots and under artificial infestations in the field (under cages) and greenhouse.
 - Study categories/mechanisms of resistance in the identified sources of resistance.
 - Develop molecular markers for key wheat pests.
 - Study biotypes of key wheat insect pests.
 - Develop IPM options for key wheat pests.
- Utilization of molecular markers and high-throughput genotyping platform in breeding programs.
- . For the aspects related to genetic resources we could jointly work on the following areas:
 - Gap analysis of ICARDA and CIMMYT genebanks holdings and organizing joint collecting missions to fill the gaps
 - Joint multiplication and regeneration of accessions with special requirements such as *Aegilops* and wild *Triticum*
 - Ensure coordinated and mutual safety duplication
 - Development of Global wheat database
 - Revision of Global wheat conservation strategy
 - Develop a strong and coordinated pre-breeding
 - Genotyping and phenotyping joint activities including sharing information to perform efficient gene mining including development and use of FIGS subsetting
 - Promoting in situ/on-farm conservation of landraces and wild relatives
- All of these areas need to be incorporated into CRP wheat as a special flagship related to the IDO on biodiversity conservation and other IDOs
- Virulence studies and coordinated deployment of available genes of resistance to major diseases and pests
- Quality improvement and targeted end-use
- Filling yield gaps

From 1st Sept CIMMYT-ICARDA BoT/DG meeting:

Agreed on international germplasm exchange priorities:

1. Maintain 'Center mandate' collections, but also Vavilov, Central Asia collections. tetraploid wheats in Ethiopia. Note that BRIC country material is not available.
2. Foster and assure CIMMYT-ICARDA germplasm exchange, material under development.

Other CIMMYT/ICARDA collaboration areas for change or improvement identified:



- Develop and coordinate pre-breeding programs for introgression of new and novel genetic variation from landraces and wild relatives: To discuss (relates to WHEAT Phase II)
- Practice more cooperation in CWANA (relates to Extension Period and Phase II) and significantly expand ICARDA-CIMMYT joint projects under the WHEAT CRP.

Ideas developed in-meeting:

FP2-3 / Biotech, Genomic selection & related informatics Group (currently CoA3.2)

1. Understand what the other is doing and how (get a sense, avoid detail)
 - Current collaborative projects discussions: Markers conversions (WHEAT-partners)! Using new Genotyping technology in CIMMYT/ICARDA!
 - Current status: KASP SNP markers already converted; both centers are using them in their wheat breeding programs. Both centers are exchanging markers information and collaborate on markers conversions for major traits of interest.
2. Agree on what to better coordinate/collaborate on what you are delivering 2015-16
 - Genotypic data sharing for IN between the two centers.
 - Scientists agreed to develop new protocols with reduced cost for screening breeding materials using SNP markers.
 - Continuing our collaborative work on marker conversions.
 - Visits exchange between ICARDA and CIMMYT scientists.
 - Sharing lab protocols, molecular data and materials for positive controls.
 - Utilization of new databases and bioinformatics tools for genomic data (e.g. BMS and others).
3. Identify areas of future (improved) collaboration, which would require additional resources during 2015-16 (e.g. perform a gap analysis).
 - Investment in DH technology is needed for winter wheat programs.
 - Clear molecular breeding pipeline is missing in both centers.
 - Genomic Selection: CIMMYT and ICARDA are currently deploying it but more collaboration between both centers and information exchange is needed (A joint project between both centers is needed).
4. Identify what researchable issues ICARDA-CIMMYT collaboration should take on during Phase II.
 - Accelerated breeding cycle coupled with marker assisted selection and genomic selection.
 - Gene targeting and genome editing.
 - Establishing common compatible genotyping pipeline for wheat breeding programs.
 - Whole genome re-sequencing projects for allele mining and markers discovery.

FP3 Spring wheat breeding workgroup: Enhanced utilization of CIMMYT and ICARDA germplasm in breeding

- Annually exchange International Nurseries and Yield Trials between two Centers
 - Phenotyping for yield, agronomic traits, resistance to rusts, Septoria tritici, and hessian fly
 - Quality analysis of lines grown in yield trials in Obregon
 - Exchange of key data for enhancing the utilization in breeding
1. Title: Building a common database, analysis and data dissemination to partners

Activities:

- Build a common database for dissemination of international nurseries and trials data
- Analyze and distribute summarized data to National Partners