Kahone (Kaolack)

Training on Climate Risk Management in Agricultural Advisory Services in Senegal

May 2023

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Acknowledgements

Accelerating Impacts of CGIAR Climate Research for Africa (AICCRA) is a project that helps deliver a climate-smart African future driven by science and innovation in agriculture. It is led by the Alliance of Bioversity International and CIAT and supported by a grant from the International Development Association (IDA) of the World Bank.

About AICCRA Reports

Titles in this series aim to disseminate interim research on the scaling of climate services and climate-smart agriculture in Africa, in order to stimulate feedback from the scientific community.

Disclaimer

This working paper has not been peer reviewed. Any opinions stated herein are those of the author(s) and do not necessarily reflect the policies or opinions of AICCRA, donors, or partners.

About AICCRA

AICCRA
Accelerating the Impact of CGIAR Climate Research for Africa

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aiccra.cgiar.org **aiccra@cgiar.org** **CGIARAfrica**

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Introducing AICCRA:

The phenomenon of climate change encompasses all sectors of life, and its impact on the agricultural sector (farming and livestock breeding) is well established.

Faced with these challenges of adaptation and survival, it is important to raise awareness among all those involved (technicians and producers) of the basic concepts and decision-support tools needed to derive maximum benefit from agricultural activities.

It was against this backdrop that AICCRA set up a train-the-trainer program with the support of universities, agricultural technicians, producers' organizations and agricultural technology extension services.

A model curriculum was selected at an earlier event in Dakar from December 05 to 10, 2022 (Fleur de Lys Point E).

A train-the-trainer workshop was organized in Saly from March 06 to 16, 2023 to validate and improve the training modules.

The AICCRA project (Accelerating Impacts of CGIAR Climate Research in Africa), is a three (3) year project (2021-2023) funded by the World Bank (IDA) in six (6) African countries: Ethiopia, Kenya, Zambia, Ghana, Mali and Senegal.

The main objective of AICCRA-Senegal is to strengthen the technical, institutional and human capacities needed to improve the transfer of climate-related information, decision-making tools and technologies in support of scaling-up efforts to strengthen the resilience of agricultural and livestock value chains, particularly in arid zones.

As part of this training program, AICCRA aims to improve and facilitate access to climate information services and climate-smart agricultural technologies for the project's target farmers, via extension agents.

AICCRA therefore aims to help build producers' resilience and make it easier for them to understand weather and climate phenomena, so they can forecast and plan their farming activities effectively.

Capacity building for intermediate users, in particular of agricultural extension and advisory services (EAS) in Senegal and five other target countries is a key element of AICCRA's strategy for achieving this objective.

In Senegal, the Agence Nationale de l'Aviation Civile et de la Météorologie (ANACIM) has the national mandate for the production of weather and climate information, and the development of climate services for the various climate-sensitive sectors and communities, including the agricultural sector.

To ensure the sustainability of its actions, AICCRA works with universities (Université du Sine Saloum El-hâdj ibrahima NIASS in Kaolack, Université Amadou Mahtar Mbow in Dakar and

Université Alioune Diop in Bambey) and research centers such as CERAAS to involve these structures in the development of content that will be taught in universities.

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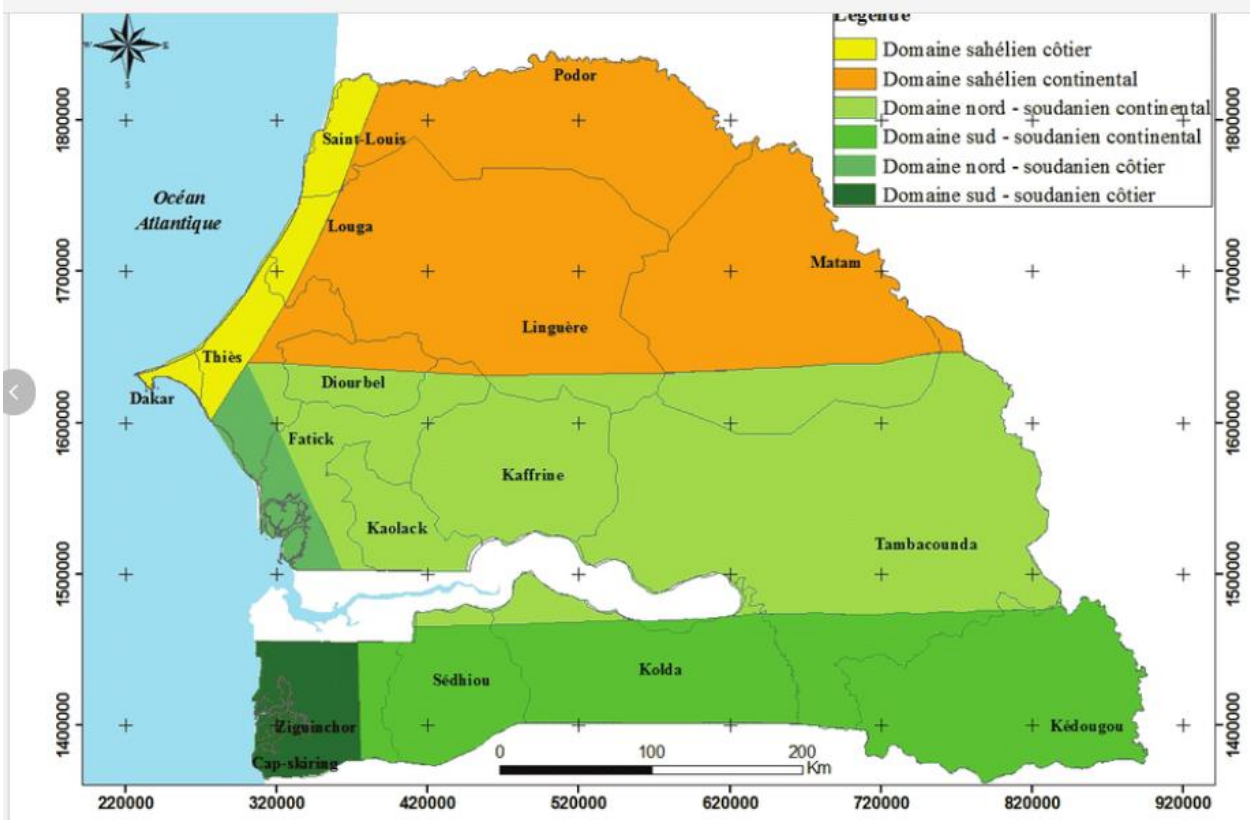


Domaines climatiques du Sénégal (Sagna, 2008).

Presentation of the training area: Kaolack

Since August 2008, the Kaolack region has been divided into three departments:

- Department of Guinguinéo
- Kaolack Department
- Department of Nioro du Rip

The Kaolack region is located between 14°30' and 16°30' west longitude and 13°30' and 14°30' north latitude. The climate is Sudano-Sahelian, with high temperatures from April to July (35°-40°C). The relief is essentially flat, with three types of soil: leached ferruginous tropical soils, hydromorphic soils and halomorphic soils. The hydrographic network comprises the Saloum inlet and tributaries of the Gambia River (Baobolong and Miniminiyang Bolong). The encroachment of the salt tongue has contributed significantly to the destruction of the vegetation cover and the poverty of the soils. There is a large basin in the heart of the old basin, which floods every year. Sunshine, or the number of hours of sunshine, ranges from a very rare minimum of 05 hours/day in November and the cloudy, rainy months of August and September, to 10 hours/day in March and April.

According to the latest general census of population, housing, agriculture and livestock (RGPHAE 2013), the Kaolack region has a population of 960,875, with 50.6% women versus 49.4% men. This population is unevenly distributed across the region: Kaolack department has a density of 212 inhabitants/km², Nioro 306 inhabitants/ km² and Guinguinéo 61 inhabitants/ km². It is also very young (over 60%).

The region is predominantly agricultural, with 65% of the working population engaged in farming. Crops are diversified: groundnuts, cereals (souna millet, sorghum, corn, rice), cowpeas, fonio, sesame, watermelons and market garden produce.)

Introducing the trainers:

Doctor Bassirou SINE,

CERAAS/ISRA Thiès

Ababacar Sy Diallo,

Agricultural Advisor, RESOPP, Kaolack

Doctor Babacar FAYE,

University of Sine Saloum El-hâdj ibrahima NIASS

Professor Cheikh Thiaw,

University of Sine Saloum El-hâdj ibrahima NIASS

Ousmane SARR,

Communication Officer, RESOPP, Thiès

Opening ceremony:

The training session took place at ANCAR Zone Bassin Arachidier in Kahone (5 km from Kaolack) from May 07 to 16, 2023.

In conjunction with the training organizers (ANCAR Kaolack), an official training launch ceremony was attended by 25 agricultural advisors from the regions of Sédhiou, Tambacounda, Kaffrine, Fatick, Diourbel and Kaolack.

After a brief introduction of the participants, the ToRs were read and the AICCRA project presented to give the trainees an understanding of the project and its objectives.

Training course:

The methodological approach was to present the modules, followed by questions and answers, and then to facilitate the exercises linked to the modules.

A WhatsApp group called "Formation AICCRA Kaolack" and a mailing list of the same name have been set up to enable easy exchange and sharing of documents.

This group will also make it easier to follow up training with growers, and to exchange and discuss difficulties in the field with the Agricultural Advisors. It is therefore a good indicator for sharing difficulties and successes with producers.

In line with the agreed and shared planning, the trainers adopted a pedagogical approach based on complementarity between trainers for the different modules and according to each other's specialities.

At the end of each day, an evaluation meeting was held to correct any blunders and prepare the next session for the following day.

One of the original features of this training course is that the agricultural advisors will be able to integrate the various modules received into their agricultural, livestock and fishing activities.

Following each presentation, working groups were set up to evaluate and work together to share experiences.

The training session was officially opened by Mr Mbaye, Director of ANCAR Bassin Arachidier, his team and the trainers, who were keen to define a common strategy for adopting the training.

This was followed by a presentation of the work program, the proposed breakdown of the ten (10) days of the session, the basic training documents and the instructions to be followed for carrying out the activities in the best possible conditions, in particular group work.

The proposed schedule is a daily session running from 9 a.m. to 5:30 p.m., with breaks at 11:30 a.m. (morning break) and 4 p.m. (afternoon break).

The first part of the first day was devoted to the presentation of the pre-training survey to enable the Agricultural Advisors to have an opinion on the training session at the beginning and at the end.

Day 1

Course and module presentation

The presentation of the planning activity on the last day led to the creation of three (3) groups: Maproom, Fangols and i-Signié group. These groups, created at the outset, will be maintained until the end of the course.

At the end of the presentation of the planning activity, we presented the four training modules:

1. Basic climate knowledge and concepts
2. Climate information products available for agriculture
3. Climate-sensitive agricultural decisions
4. Rural Climate and Communication Strategies Department

The first day ended with a presentation on **Climate Basics** and discussions.

Day 2

On the second day, the module on 1.2 Climate characteristics in Senegal was presented, followed by the session on 1.3 Climate data and information.

We must point out the low level of some advisers, especially in IT, and the lack of computers for some (others have never used computers (6 out of 25 advisers)).

A small Excel training program was improvised to give everyone an easy understanding of the exercises:

A1-1 ; Example of climatic characteristics

A1-3; Histogram, cumulative probabilities, exceedance probabilities and terciles of annual rainfall totals in Senegal (1981-2022), example of histogram implementation.

The lack of computers and computer skills, which were real problems in setting up histograms, were overcome, especially as the explanations on how to set up these 'histograms' enabled us to adopt a strategy of comparing these histograms with buckets of water. This method made it easier to understand, and was particularly helpful in the Producer-Agricultural Advisor role-plays.

Day 3

The third day's program included the following presentations:

1.4 Seasonal climate forecasts

2.1 Review of climate information in Senegal,

2.2 GTP Bulletin,

2.3 The ANACIM datatheque,

2.4 The Ag Data Hub

Day 4

The morning of the fourth day was devoted to the exercises in activity **A2.2 :**

Analysis of climatic information in the GTP bulletin,

Maproom navigation and

Ag Data Hub.

The afternoon was devoted to presentations:

- 2.5 Interpretation of ANACIM's seasonal forecasts for the year **Activity**
- A2-5: Interpretation of the ANACIM seasonal forecast**.**

Day 5

3.1 Climate-sensitive production decisions *and* 3.2 Decision-making under *uncertainty*

A3-1: Support climate-sensitive decisions by producers

A3-2. Use a decision tree to represent a cultivar selection and fertilizer rate decision

Day 6

On the sixth day, the following modules were presented:

3.3 Climate risk management options at farm level,
3.4 Analysis of farm management options using farm models and business budgets,
3.5 Agricultural decision-support tools,

With exercises

A3-3. Index insurance game,
A3.4, Corporate budget spreadsheet demonstration
A3-5. SIMAGRI demonstration and exercise

Day 7

Activities A3-3 and A3-5 were repeated at the request of the Agricultural Advisors on the morning of the seventh day, followed by the presentation of the module:

Rural Climate Service Communication Strategy.
Activity A4-1 Rural climate service communication strategy for a given context will close the seventh day of training.

Day 8

On the last day of training, the activity

4.2. Participatory training and planning workshop for seasonal forecasts with growers was presented, followed by a wide-ranging debate on feasibility, with a focus on translating technical terms into local languages. The model of technical terms (work begun with Ousmane SARR, from RESOPP) was also shown, to ensure a common translation of terms.

As agreed on the first day, the post-training form was projected on the last day to enable all participants to fill in the content.

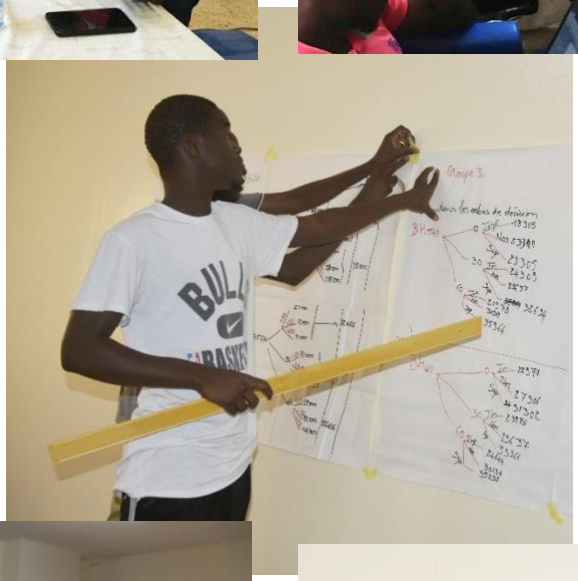
Difficulties encountered before, during and after training

- Problems at the host sites (accommodation, care) plagued the entire training program.
- Frequent power cuts requiring the video projector to be restarted were noted throughout the course.
- Air conditioning malfunction in the training room, with temperatures hovering around 42-43 degrees Celsius
- Too small a room, barely able to hold 30 people
- Not all trainees received certificates despite attendance lists being sent out.
- Unconventional accommodation (cleanliness and security) with informal, amateur management (room problems at weekends).
- The time allotted to the modules seems very short, especially in view of the exercises, which take much longer to complete, given the low level of some of the agricultural advisers.
- Lack of time for discussion between trainers to get training off to a good start (at least one day before the start of training).
- One notorious fact struck us as odd: the absence of the AICCRA logistician or an AICCRA person on the last day of training, despite their presence at the other two training sites (Bambey and Thiès). Why skip Kaolack?

A few comments on the training:

- Explain terciles in more detail, especially in terms of exceedance probabilities
- Do more exercises to facilitate the notions of Seasonality, Delay, Horizon...
- Give more details on the link between OHS and Forecasting
- Translate all the modules into French (some terms in English are used in the modules, recommended reading in English)
- Summarize the theoretical part on models (calibration, calibration, validation...) and put more emphasis on practical exercises.
- Give more details on the link between psychology and the notions of brain, Cortex, Amygdal.
- Integrate the social context into module 4 (Gender) for access to climate info, focusing on the family rather than on women.
- Give more time to Module 4 (2 days) because this module is the receptacle and transmission tool of the training.

Some photos:

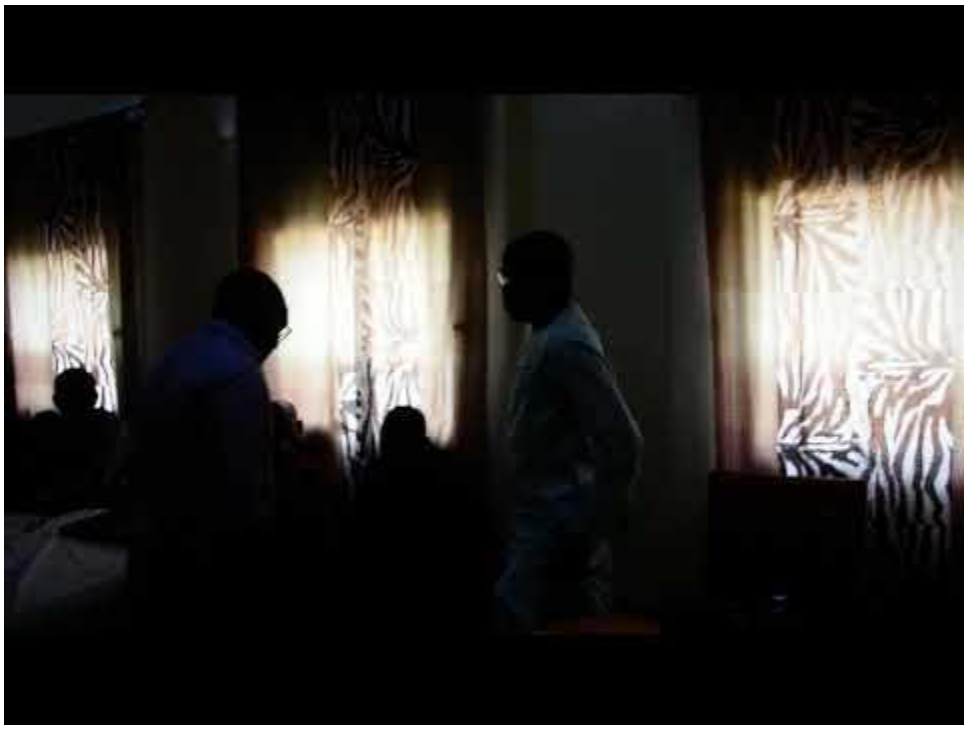


Conclusion:

The training of trainers has come and gone, and it was a pleasure to share it with ANCAR Kaolack Zone Bassin Arachidier management and beneficiaries. The challenge was to share this rich content with the Agricultural Advisors who will in turn pass on the knowledge acquired, while not neglecting endogenous knowledge for a participatory content aimed at Producers.

The results of the evaluations shared and discussed on Tuesday, May 30 and June 1, 2023 provide overall proof of the success of these sessions in Kaolack, Bambey and Thiès.

A number of features need to be adapted here, to enable trainers and the AICCRA team to refine certain strategies and documents for easy understanding and appreciation of the work provided.



Appendix 1: Technical terms:

Technical terms	Wolof			Sérère		Diola	Mandingue	Poular	
Climate	jawwu, thiorogne	diaoudji	thioorone, diawou dji	climafe		waamaaye	khawnia	wéyyo	diamaano
Time	jamono	wakhtou	diawou dji	wakhtou	WAKHTOU	e wataye rindi	waato	wéyyo	diamaano
Climate change	sopity jawwu ji	thiopékou diaoudji	diafé diafé diawoudji	a souptakh khale climafa			khawnia yelemata	wayelo wayelo wéyoggo	diamaano komo bokkholotido
Climate variability	wuuté jawwu ji	melokane							
Temperature	melokan jawwu ji	melokanou wakht wi	melo	a bayale		e bolaye diobi diobi	kandoo or soumouya		
Minimum temperature	melokan jawwu ji bi yees	melokanou wakht wi gueuneu néew		a bayale newou					
Maximum temperature	melokan jawwu ji bi eup	melokanou wakhtou wi gueuneu kawé		a bayale mayou					
Average temperature	melokan jawwu bi dig doomu	mélokanou wakhtou wi gueuneu yémé maay		a bayale podou					
Rainfall	tollu waay taw	taw bou méti		a theb			sama soumndan dioran	tobodji	
Rain gauge	natu kay taw	natoukay taw		edira theb				metorggal tobo	
Millimeter of rain	limu taw bi		taw		A TEB OR TEBANE	emitaye	samaa	millimeter tobo	touddi, tobo
Insulation	thienierr	najal						ngoulékki	
Light	léer	leeray	dienere	thiegnar	DIENERRE	balayabou	dibo or black a fanoutalé	lérro	foyré / law-lawal
Humidity	goussay	gouss	pod	a khoubane	A KHOUBANE	kamonakou	soumaya	nmoumékki	lépo-lépo
Sea surface temperature	melokan kaw gueej			a bayale no magole					
Ocean	gueej	guéedj yi	guethie gui	diouwame		falafou feumeuk	diouwame	mayyo	baharu

Melting glaciers	séyay galass			a soyale na palamara ke				ice thiay no	
Seasonal forecast	guissaané ab diir	naaloup diamano	fangadekou nawette wala nord	a lib o khidole			waatoo	ndouggou gou lélori	
Weather forecast	guissaané jamono			a lip a					
Numerical forecasting model	guissaanéwukayi si xarala yu bess	diameul naal si kharalayi	nawette		NDIGG	fou diamorafou	sama kono		
Forecast uncertainty	diaffé diaffé yu and ak guissaané	djikhi diakha si naalyi	lol lii, north		TI HHIIDE	fou leyara rantafou	tili kandoo		
Forecast update	yeessal guissaané	yessalaat naalyi							
Forum on seasonal rainfall forecasting in West Africa	leul guissaané taw yi si afrique sawu jant	ndadjém naalal diamanoy nawét si badj ganaarou afrik							
Satellite	daraan	kharala natoukay							
Tide	gueej			wame					
Low tide	gueej gu yeek	tolouway guéygui		o nguiss				mbem péddié	
High tide	gueej gu wathi	guédj gou fér	shower, yengou yengou guedj	a mayine		moulouamou falakh	a yakhaké waamo	mbem péddié less nhouné	mayo ngo dilate
Swell		gédj gou fess	geej gou dal	a yagueyague		moumelamou momou kassaye	baa fa	mbem péddié towdé	mayo ngo dilani
Rain	taw	ganakh	geej gou ganakh	a teb		moumelamou momou meme	baa dia		mayo ngo dili
Drought	bekoor	tawyi	ganakh, diakh	o wer			panfadio pampaling diama	tobo	
Flooding	mbeund	bécoor	sweet guedji	o jab	A YAKHAKÉ	falonkaf	panpadio baa babalingo	hokéré	pédiam guedji
Seeds	djiwu	mbeund	eugueu	akhe			kilikandi sama		higou
Certified seeds	djiwu bu niu saytou	djiwou	bécor	akhe pakh	THIDE	kassayakoufou diafoubambame efoureye fouleraf	diaa	awdy	hokéré

Radar		djiwou bougnou bou gnou tann	mbendeu waal		A DIA	melam mou dioupodioupo	samaa bah	awdy thirndy	wendou
Cloud	niir	ntaal	djiwou	ell	YAAKH	eloukite	touroo		wendou
Wind	nguélow	niir	djimou mou mouthie ayib	ngengne		eloukite ya diaké	touroo moungue kessingue	ndoulé	
Gust of wind	guélow bou ame doolé	ngalaw		a ounde				henddou	
Plant transpiration	li ganthiakh di niakh	ay ngalaw	hiine	ne takharke a nionta	A DIOUKHA DIOUKH	koutouleuk	minayoo	kénély	iwoné
Evapotranspiration			nguelew	fofile ndiedj ne a khota no doufele	A KEGNE	eroussaye	fonioo	fofadou lénéné	hendou
Crop water requirements	li nganthiakh di soxla si ndox		thial mber	ke khokhele sokhlana no fofi		erousse yeumeuk	tourbadoo		
Thunder	deunnu	sokhlay ndokhou ganthiakhgui	taw bou yengou	doude			tourbatoo		
Lightning	melakh	deunou		o khigne		boubeure	yiiroo or si segon	di ngaly	
Storm	taw bu and ak ngelaw	melakh		a theb la yona fa a ounde				diam nguèle gniwodé	

Attendance sheet :

A total of 25 people attended from the below institutions. All participants noted below are from Africa and one was female.

	Institution	Gender		Institution	Gender
1	RESOPP	M	16	Farmer Co-op Milleux	M
2	Jokalante	M	17	Farmer Co-op Wack	M
3	Name	M	18	ANCAR	M
4	RESOPP	M	19	ANCAR	M
5	ANCAR	M	20	ANCAR	M
6	ANCAR	M	21	ANCAR	M
7	ANCAR	M	22	ANCAR	M
8	ANCAR	M	23	ANCAR	M
9	RESOPP	M	24	RHCPS	M
10	RESOPP	M	25	RESOPP	M
11	RESOPP	M			
12	RESOPP	F			
13	Coprosen	M			
14	CRI	M			
15	RHCPS	M			