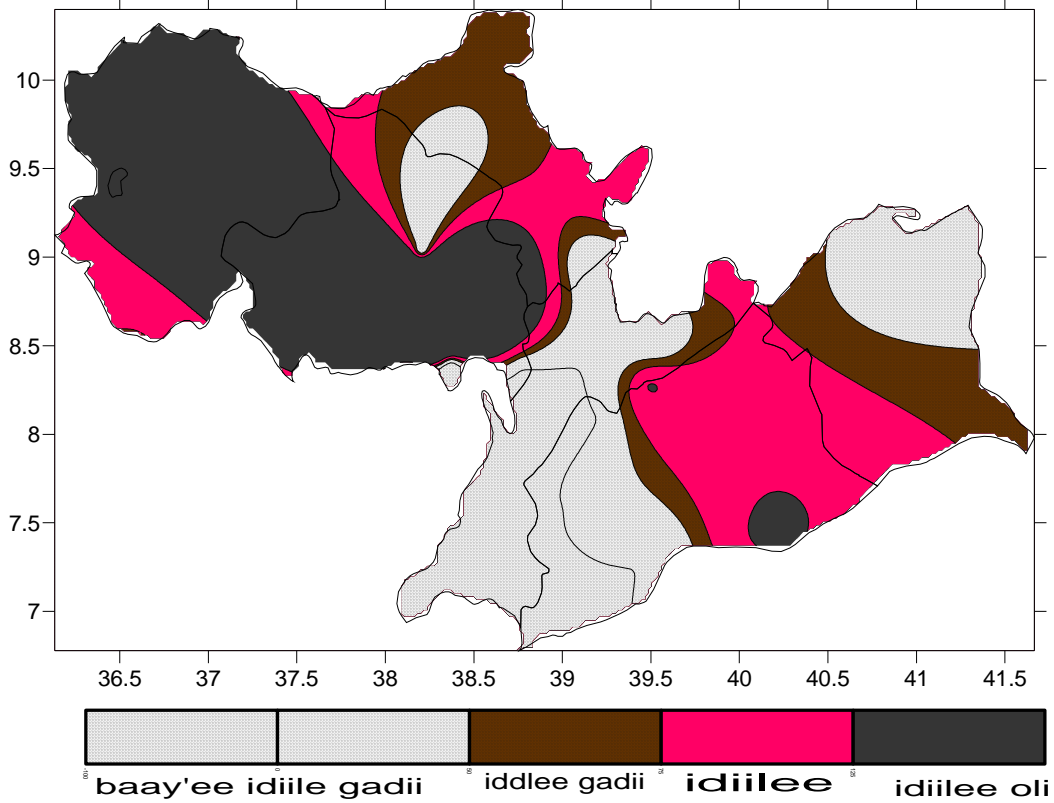


EJEENSSII MIITOROLOJII BIYYOOLEESA WAJIIRA DAME ADAMA

BARULLEE HAALA QILLEENSA JI'AA AMAJJII 2010



Harrarigee Dhihaa Arsi bahaa, Shawa Dhihaa fi kabaa, wallagaa bahaa irraati rooba idilee fi idiile ol ta'e yoo aragatan. Kara birron qaariqaaraa shawaa Bahaa, harrarigee bahaa fi Arisi dhihaa irraatti rooba idiile gadii fi baay'ee idiilee ta'ee galmeesaniruu. Qaariqaaraa Wallagga bahaa fi iddoo kisii Arsi irraatti rooba idiilee gadii ta'e argataniruu.

SEENSAA

Baruulleen haala qilleensa kun qophaa'ee kan tamsa'aa jiru dhaabbata Miitiwooroljii biyyoleesaattii waajjira dame Adaamaatiin. Yaada, komii fi jajjabinni nuuf kennamuf guddina tamisaa'inaa fi qabiyyee biro itti daballufis barulle kanaaf gumaacha guddaa kenna.

Ergaan barulleen kun qabatte sochii dinagdee hawaasummaa naannoo Oromiyaa ni gargaara jedhamee itti amanama. Akkuma beekamu Oromiyaan Qonna, Turizimii fi Ijaarsaatti (construction) xiyyeefannaa guddaa naanoo kanneefi dha. Kanaaf ergaa bu'a qabeessa keessatto qabatameef sektarronni maqaan isaan armaani olitti ibisamani barulee kana halaan akka hordoofan jabeessinee gorsina.

Baruulen kun baruule yeroo jedhaame ykn yeroo jedhaametti dhiyaate maxaanifaamu irra addaa kaan isaa godhuu ragaale bufatootaa Mttiwooroljii irraa sasaabaman irrattii kana hundaa'a waan ta'eef kun immoo sekiiteeroon baay'ee akkaa irraa fayyaadamaaan gargaar.

Waajirri dame Adaamaa booddeetti harkifannaa ragaa (data) buufata adda addaa irraa kan ka'e kan ji'a jedhaame guyyaan 20 erga darbee booda maxansee tamsaasa . Kun dhiyeenyatti haala jabaa foyya'insa wal-jijjirraa raga (data) buufataalee Miitiwooroljii jidduutti godhamuun foyya'uu ni danda'a. Yaada komii fi jajjabinni nuuf kennamuf guddina tamisaa'inaa barulle kanaaf gumaacha guddaa kenn

Waajjira Damee Adaamaa

L.S.P:-1982

L.BIN:-022 111 61 74

E.maylii:-admamet@ethiomet.et

HAALA QILLENSAA

Tempireechaaraa

Tempireechari qilleensaa wantoota sochii qonnaattiif barbaachisaan keessa isaa tokkoo dha. Barbaachisumaam isaas sochiiwaan kanneen akkaa rispaarashiin fi fotoosenteesisii akkaa garriitti adeemsifaaman taasisa. Biqiltuun tokkoo biqilee guddaatu kan dandaa'u tempireechara 0°c hanga 60°c gidduttii dha. Hataa'u malee biqqiltoottin adda addaa tempireechara ol-aanaa fi gad aanaa it guddaatan kan mataa issaan qabu. Kanaafu .gidduugala temperrecharraa caala tempireechara ol-aanaa fi gad-aanaa irrattii xiyyeefachuun barbaachisaa dha. It dabaalataannis tempireechar baay'ee ol-aanaa fi gad-aanaa guyyaa beekun barbaachisaa dha.

Ji'a Amajji 2010 kaannaatti guyyaan goddinaa Shawaa bahaa bufataa bakko irraattii 39.1°c kokadam irraattii 35.5°c sibusire irraattii 32.2°c tempireechara baay'ee ol-aanaa ta'e guyyaa tokkoo keesattii galmeesaniruu (Fakkii 1 ilaala) fi (Gabatee 1 illaala) Yeroo ji'adarbee waalin wal-birraattii ilaalu ji'a amajji kanaattii kan ji'a darbee (Amajjii 2009) caala ho'ee mul'ateera.

Galgaali fi ganaamin barii Shawaa kaaba fi bahaa irraattii duraadubaan kanneen biroo caala qorree mu'ateera (Fakkii 2 ilaala). Tempireechara baay'ee gad-aanaa guyyaa Shawaa Kaaba, bufataa habe, kula Gabiragurachaa, , Tikurinchini fi guder irraattii tempireechara -1.1°c , 0.5°c , 1°c , 2.5°c , fi 2.5°c duraadubaan galmeesaniruu (Gabatee 2 ilaalaa)

Giduugalaa tempireechara qilleensaa Waggaa dheraa kan Amajji 2010 walli biraa qabinee yoo ilaalu (kun jechuunis giddugaala tempireechara waggaa dheera hir'isuu kan amajji bara 2009). Goddinaa wallagaa bahaa fi shawaa kaaba iddoo Kessi irraa hir'atee mul'ateera. goodinaleen shawa baha fi dhiha, arii, fi harrarigie irrati dabaalee mul'ateera. (Fakkii 3 ilaala).

Gabatee 1:-Bufatoota tempireechara baay'ee ol aanaa guyyaa 25.5°c fi ol ta'e ji'a Amajji 2010 tii galmeesan.

| Bufatoota | Tempireechara baay'ee ol anaa (°c) | Guyyaa |
|------------------|---|---------------|
| Bako | 39.1 | 11 |
| Kokadam | 35.5 | 31 |
| Sibusire | 32.2 | 31 |
| Mojo | 31.5 | 18 |
| Bele | 31.5 | 10 |
| Arata | 31.3 | 27 |
| Bedesa | 30.2 | 18 |
| Abomsa | 29.5 | 29 |
| Tefki | 29.5 | 30 |
| Guder | 29.2 | 3 |
| Adama | 28.9 | 19 |
| Kimoye | 28.6 | 31 |
| Cheffedonsa | 28 | 20 |
| Addisealem | 27.3 | 31 |
| Huruta | 27.1 | 19 |

**Gabatee 2:-Bufatoota tempiirechara baay'ee gad anaa guyyaa 9.6°c fi
gad ji'a Amajji 2010 tii galmeesan.**

| Bufatoota | Tempirechara baay'ee gad anaa (°c) | Guyyaa |
|------------------|---|---------------|
| Habe | -1.1 | 14 |
| Kula | 0.5 | 13 |
| G/Guracha | 1 | 5 |
| Tikurinchini | 2.5 | 1,11 |
| Guder | 2.5 | 9 |
| Sululta | 3.5 | 8 |
| Tefki | 3.5 | 13 |
| Kality | 3.7 | 1 |
| Bedesa | 4.4 | 13 |
| Chancho | 4.5 | 17 |
| Mojo | 4.5 | 14 |
| Sheno | 4.7 | 8 |
| Keranio | 5 | 26 |
| Assela | 5 | 27 |
| Addisealem | 5 | 25/ |
| Huruta | 5 | 8 |

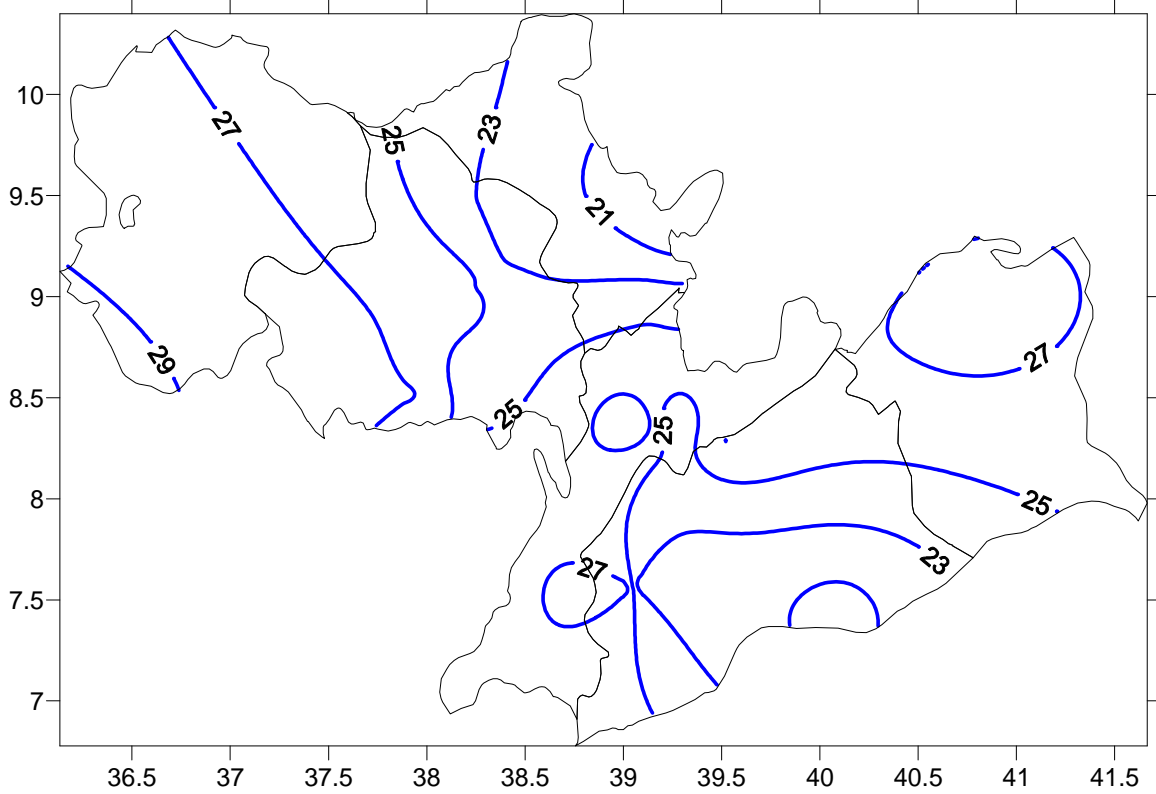
Rainfall

Amajii ji'a gogogaa waqitti bonaa keessaa isaa tokko dha. Ji'a kan keessaatti irraa caalaan biyyaat qilleensaa gogogaa fi bubee qabu jala turenii. Gooddinaaleen Arsi Baha, Shawa dhihaa fi kabaa , qaariqaaraa wallagaa bahaa fi Harrarige irraati rooba dimishaasha mm15 gadii ta'ee galimesaniruu. (**Fakkii. 4 illalaa**). Goddinallee Oroomiyaa damee Adaamaa jalaa jiraan rooba Harrarige Dhihaa Arsi bahaa, Shawa Dhihaa fi kabaa, wallagaa bahaa irraati rooba idilee fi idiile ol ta'e yoo aragatan. Kara birron qaariqaaraa shawaa Bahaa, harrarige bahaa fi Arisi dhihaa irraatti rooba idiile gadii fi baay'ee idiilee ta'ee galmeesaniruu. Qaariqaaraa Wallagga bahaa fi iddoo kisiiArsi irraatti rooba idiilee gadii ta'e argataniru (**Fakkii. 6 illalaa**). Waluuma galaatti fafaaca'insii rooba kan baraa 2008 waliin wal biraatti yoo ilaalu bakee baay'eetti idaa'ee mulatatee jiraa. Haata'u malee Dhihaa fi kaba Wallagga Baha irraatii bookaan hir'aatee jiraa (**Fakkii. 5 illalaa**).

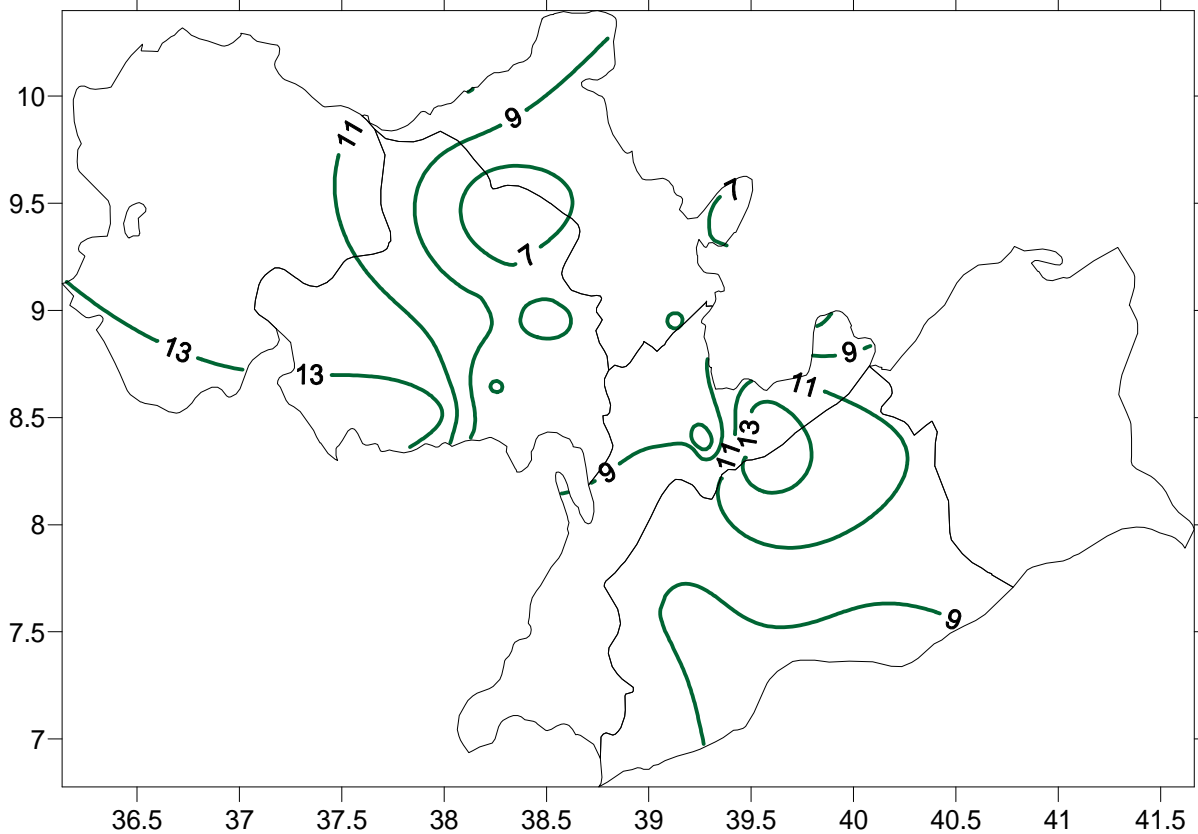
Gabatee 3:-Bufatoota rooba baay'ee ol aanaa guyyaa tokkoottii galmeesan.

| Bufatoota | Rooba baay'ee ol anaa | Guyaaa |
|------------------|------------------------------|---------------|
| Tikurinchini | 80.5 | 18 |
| Ifabiya | 77.6 | 12 |
| Ginchi | 45.5 | 21 |
| Tokkerensa | 37.7 | 16 |
| Gimbibila | 36.9 | 21 |
| G/Guracha | 36.8 | 22 |
| Inchini | 36.3 | 16 |
| muger | 33.2 | 21 |
| Gedo | 29.7 | 24 |
| Shambu | 29.1 | 19 |
| Sedika | 25.7 | 17 |
| Abomsa | 19.9 | 21 |
| Guder | 19.8 | 19 |

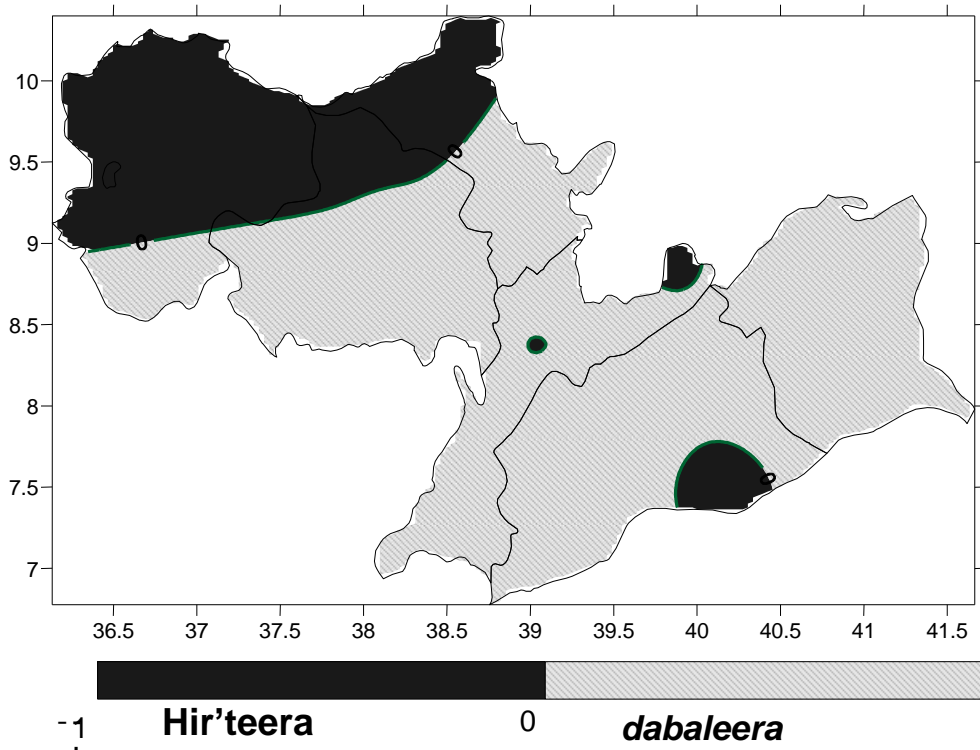
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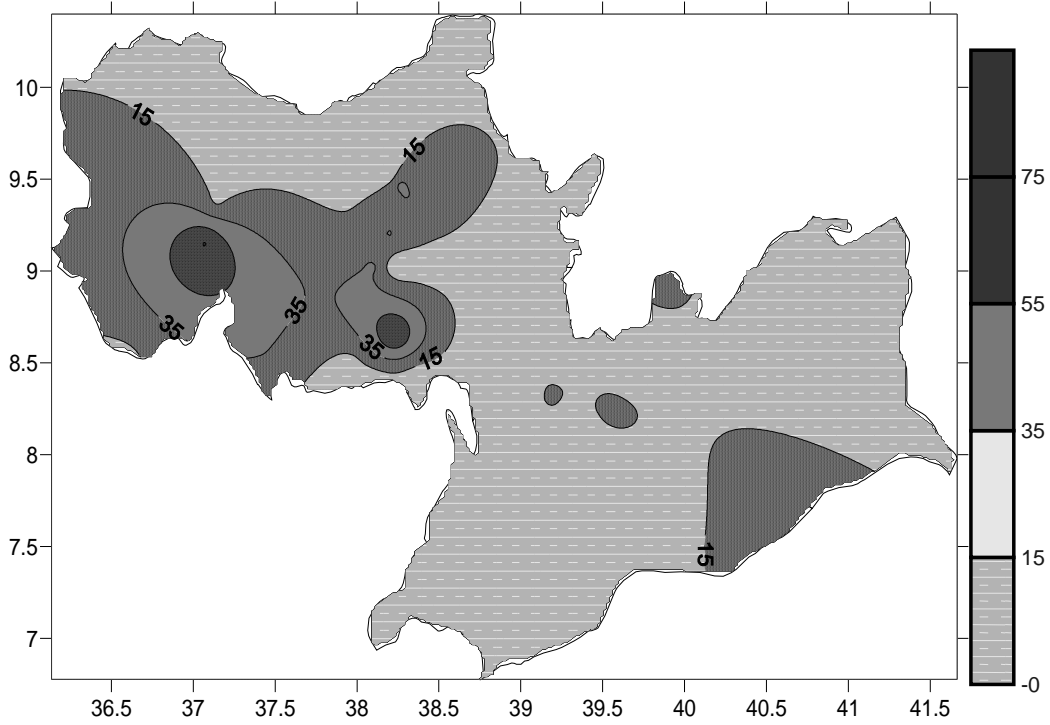
Fikkii 1:- Gidduugala Tempirechaara baay'ee ol aana ji'a Amajjii 2010.



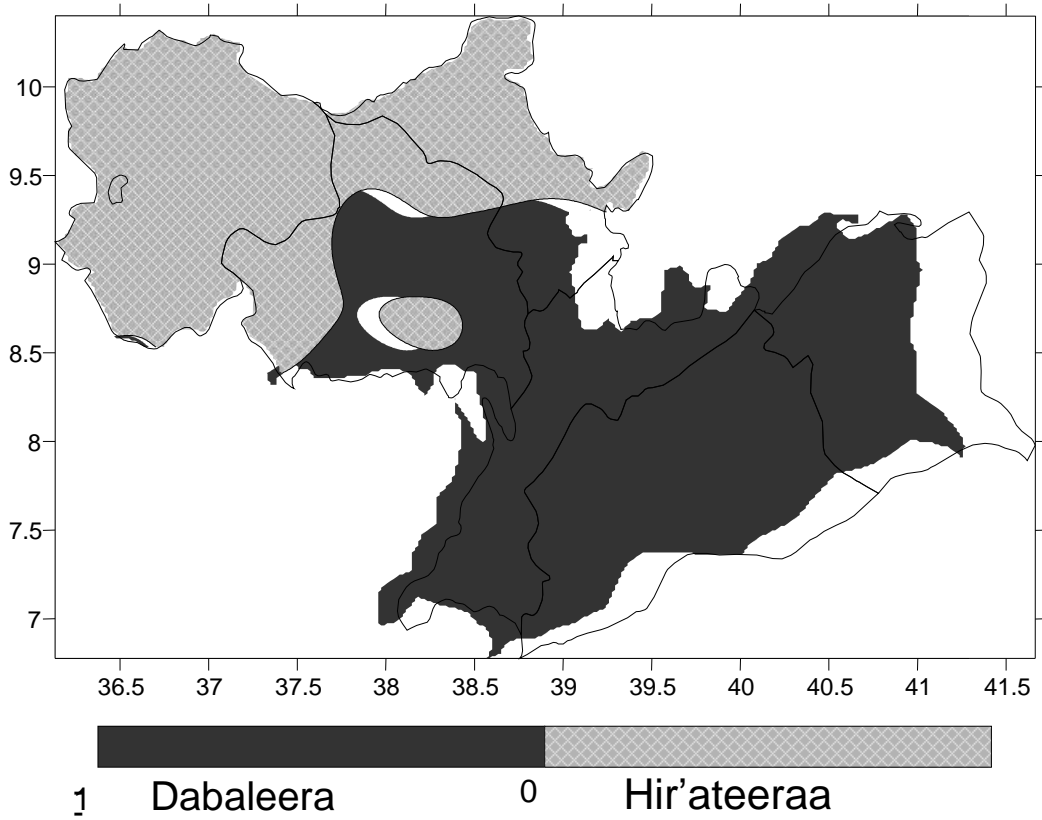
Fikkii 2:- Gidduugala Tempirechaara baay'ee gad aana ji'a Amajjii 2010.



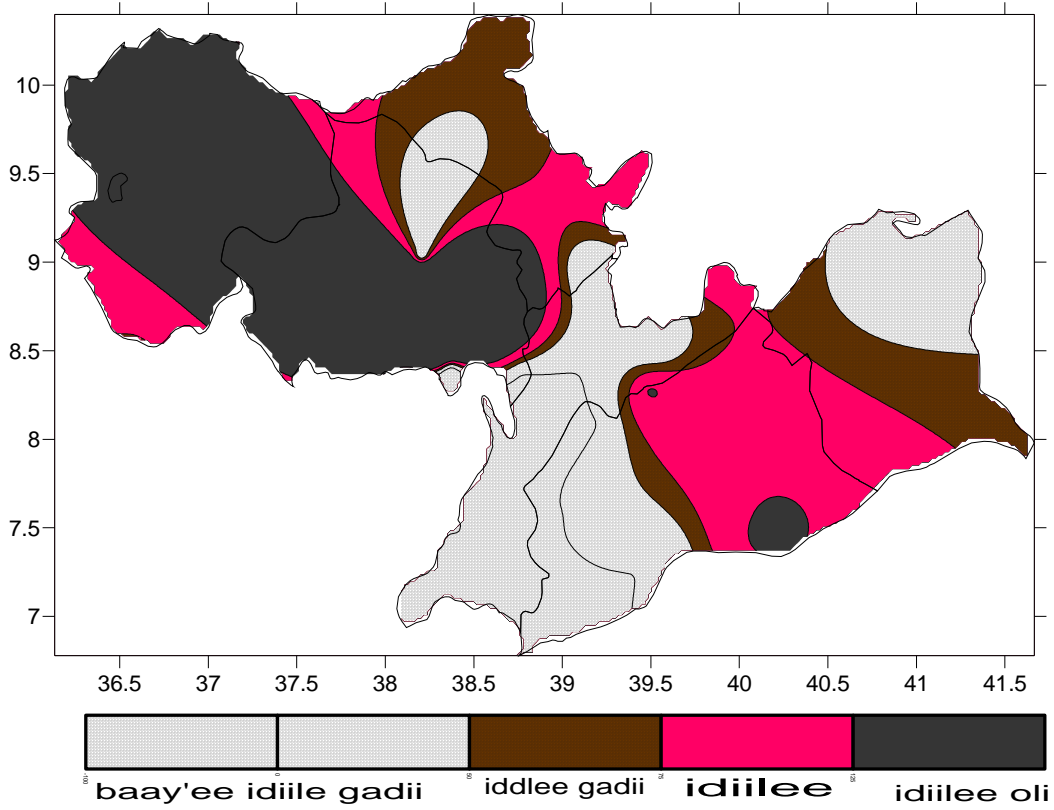
Fakki 3:-Garaa garumaa tempireechar dimishasha ji'a Amajji kanaan 2010 fi bara 2009



Fikk 4:-Rooba dimishaasha ji'a Amajji 2010.



Fakki 5:-Garaa garumaa rooba dimishasha ji'a Amajji kanaa 2010 fi kan bara 2009 .



Fakkii 6:-Rooba Idiilee ji'a Amajji 2010 Dhibaantaama dhani.

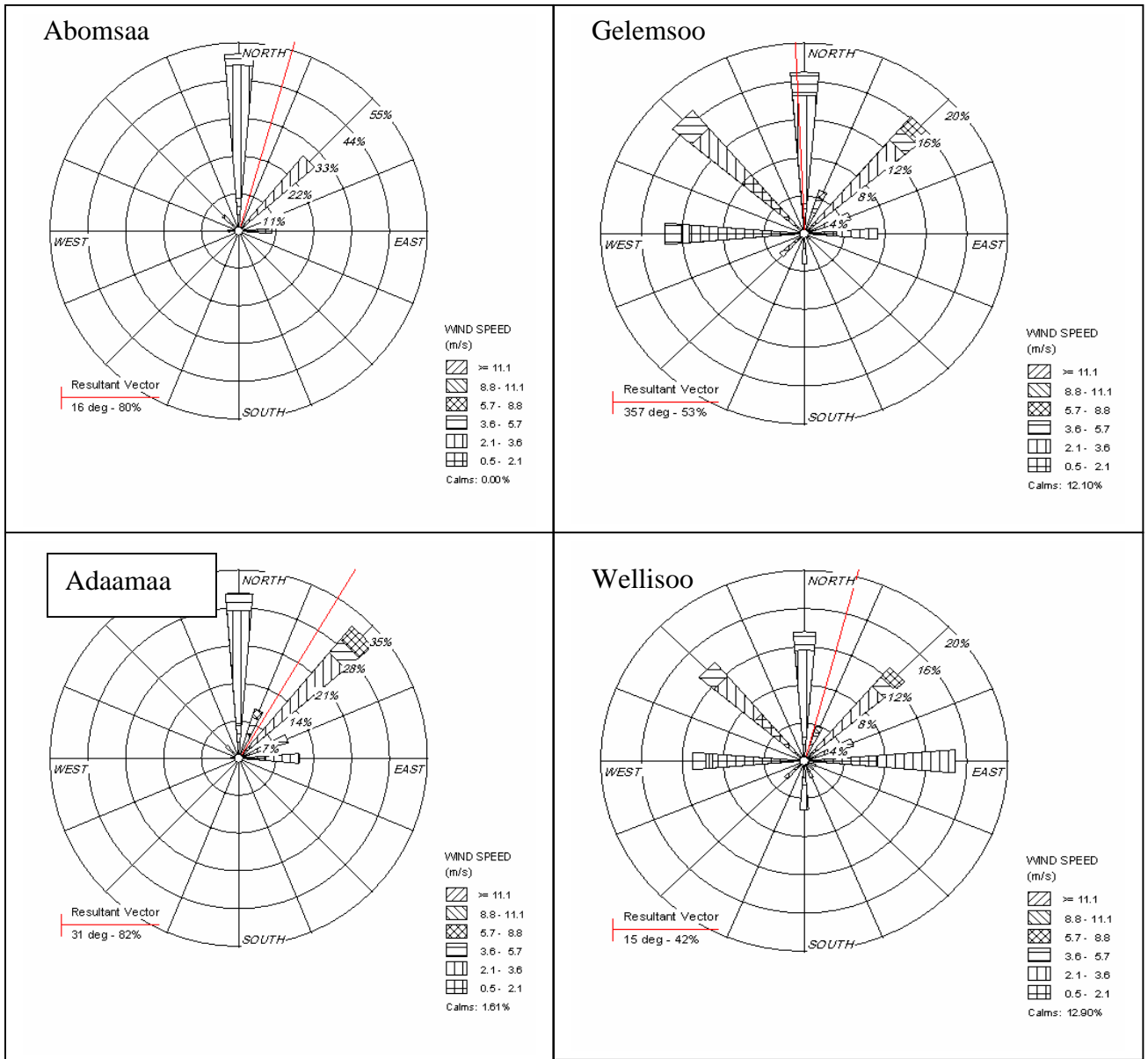
QILLEENSA (BUBBEE)

Fakkiin safsaaf fi kalaatti qileensaa armaan gadii haala qileensa bufatootaa Adaamaa, Arsi-Robbee, Ejaajii, Nura'eeraa, serru, Kachisee, Welliso fi Shamboo. Ji'a kantii bufatootaa kan qileensaa cimaa kan galimeesa bufataa Adaamaa 11.1 m/s dha.

HUBACHIISA

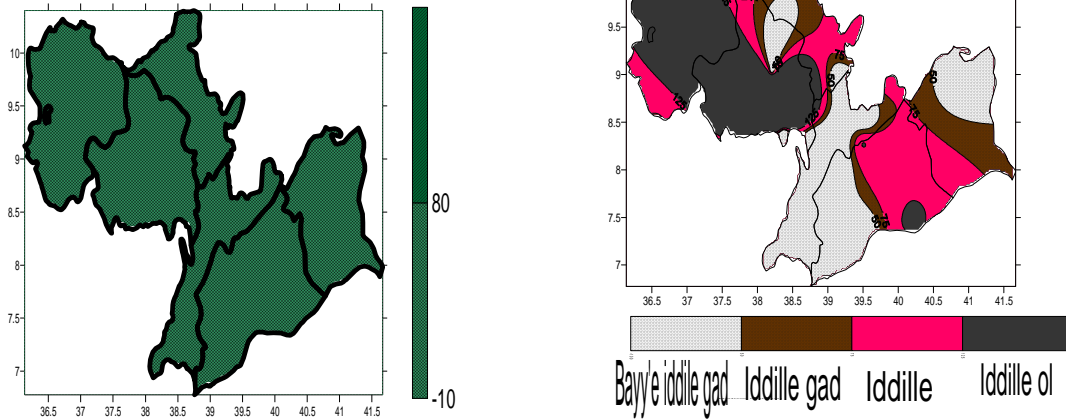
- ✓ Hadhuurri fakkichaa (mataa xiyaa) bufattota gara bubben itti bubisu yoo aarsisu dubni isaa immoo iddoo irraa dhufee agarsisa.
- ✓ Dheerin xiyaa safisaa fi kallatti faana proporsinaali dha.
- ✓ Parsanttin geengo keesatti argamu wal madaalli safisaa agarsiisa

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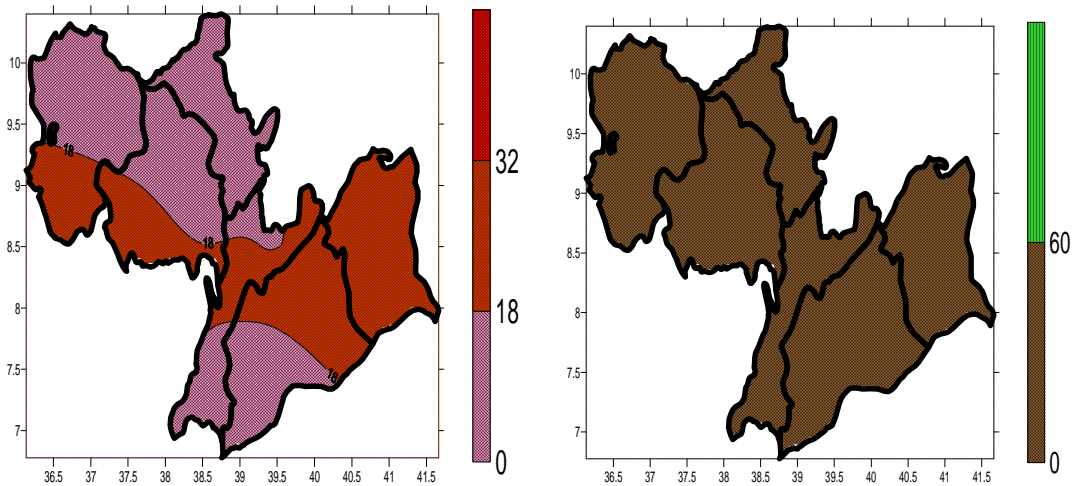


Rooba, Temppiirechara fi Jidhinsaa (Relative humidity)

Dhiyeenyaattii qoratooni haala qilleens waltaa'a adunya ,haala qilleensa irraattii hunda'udhaan akkaata busaa Afrikaa irraa ittiisun dandaa'amu qorataani turee. Akkaata qorannoo kannaattii haali qillensa wal-hormaata bookkee busaaf mijaatuu beekamra, **kunnis roobni dimshaasha(RD) ji'a yoo xiqqaate 80mm, giduugali tempireechara(GT) ji'a 18 °c hanga 32°c fi humidiittiin(relative humidity) yoo xiqqaate parsantii 60 ta'u qaba.** Kannaattii dabalaatanis wantoota haala qillensa alaa wal-hormaata bookkee busaaf mijaataan beekuun barbaachisaadha. Kanaarattii hundaa'uudhaan ji'a Ammajii 1010 kanaattii roobni dimshaasha goddinalle hunda irrati 80mmgad ta'ee fi humidiittiin(relative humidity) goddinalle hunda irrati parsantii 60 gad ta'ee mulateera kannafu haali qilleensaa wal-hormaata bookkeebusaaf mijaatuu hin mul'ane.



Fakkii .1 Robaa dimshasha Ammajii 2010. (a). Rooba dimshasha 80mm ol ta'ee (b) Rooba idiile parsantiidhaan.



Fakkii.2 Tampireechara fi jidhiina qilleensa keesa jiru.(a) Gidduugala tampireechara guyyaa 18 °c hanga 32 °c (b) jidhiina qilleensa keessa jiru 60% fi ol ta'ee.

Tempiirechara Humiddiitti Indeeksii (THI)

Tempiirechara Humiddiitti Indeeksii (THI) kanaa yeroo jalqaabaaf kan argaatan qoratoota haala qilleensa Ameerka (us weather Bureau) bara 1959dha. Kunis kan inni fayyaadu Raaga tepiirechara fi humiddiitti fayyaadamuun haala qilleensa bake tokkoo namaattii tolaa moo hin toluu kan jedhuu beekuf nugargaara, Akkata kanaattii yerroo THI 26 ol ta'u nama hundaattii hin mijaatu, yeroo THI 21 hangaa 26 ta'u nama wal-qixaa olitti hin mijaatu ykn immoo jidduugala jedhama, yeroo THI 21 gaddii ta'e immoo nama hundaattii mijaata(toola).

Akkaata armaan oliittii ji'a Ammajii 2010tti iddo murasa irra kan hafan bakkewan hunddi namaattii kan tolan ture.

Gabatee 4: Tempiirechara Humiddiitti Indeeksii (THI) ji'a Ammajii 2010

| Lakk. | Bufatoota | Lakkoofsaa Guyyaa THI | | | |
|-------|-----------|-----------------------|------------------------|--------------------|------------------|
| | | <21 mijaata | 21-26 Jidduugaleesa | >26 Hin mijaatu | Guyyotaa ji'a |
| 1 | Adamaa | 27 | 4 | 0 | 31 |
| 2 | Ambo | 31 | 0 | 0 | 31 |
| 4 | Addale | 31 | 0 | 0 | 31 |
| 5 | Qulumsaa | 31 | 0 | 0 | 31 |
| 6 | Kachise | 31 | 0 | 0 | 31 |
| 7 | Fiche | 31 | 0 | 0 | 31 |
| 8 | Metahara | 10 | 21 | 0 | 31 |
| 9 | Mi'esoo | 29 | 2 | 0 | 31 |
| 10 | Walliso | 31 | 0 | 0 | 31 |

Reference

Grover-Kopek et al 2006 (-Web-based climate information resource for malaria control in Africa, Malar J.2006; 5:35 published online 2006July)

GABAASA HAALA QILLEENSAA JI'A Amajii ,2009

| Bufaatootaa | Lat | Lonig | RD | RDBO | Guyyaa | GTOA | GTBOA | Guyyaa | GTGA | GTBGA | Guyaa | RI |
|------------------|-------------|--------------|------|------|--------|------|-------|--------|------|-------|-------|----|
| Tikurinchini | 8.65 | 38.23 | 80.5 | 18 | 18 | 23.5 | 26 | 30 | 6.8 | 2.5 | 1,11 | |
| Ifabiya | 9.16 | 37.07 | 77.6 | 18.4 | 12 | | | | | | | |
| Ginchi | 9.03 | 38.12 | 45.5 | 23.5 | 21 | | | | | | | |
| Tokkerensa | 8.58 | 37.41 | 37.7 | 13.2 | 16 | | | | | | | |
| Gimbibila | 9.03 | 38.12 | 36.9 | 16.8 | 21 | | | | | | | |
| G/Guracha | 9.48 | 38.25 | 36.8 | 13.7 | 22 | 23 | 25.5 | 30 | 5 | 1 | 5 | |
| Inchini | 9.19 | 38.2 | 36.3 | 10.3 | 16 | | | | | | | |
| muger | 9.38 | 38.36 | 33.2 | 15.6 | 21 | | | | | | | |
| Gedo | 8.34 | 39.2 | 29.7 | 15.3 | 24 | 24.8 | 26.1 | 9 | 10.6 | 9 | 5 | |
| Shambu | 9.34 | 37.07 | 29.1 | 14.1 | 19 | | | | | | | |
| Sedika | 7.44 | 40.12 | 25.7 | 15.3 | 17 | | | | | | | |
| Abomsa | 8.28 | 39.5 | 19.9 | 16.2 | 21 | 27 | 29.5 | 29 | 14 | 9.5 | 13 | |
| Guder | 8.97 | 39.78 | 19.8 | 14.2 | 19 | 26.3 | 29.2 | 3 | 6.2 | 2.5 | 9 | |
| Keranio | | | 17.9 | 9.5 | 19 | 25 | 26.5 | 18 | 8 | 5 | 26 | |
| Abebe kerenso | 9.18 | 38 | 17.7 | 6.1 | 20 | | | | | | | |
| Chancho | 9.18 | 38.45 | 16.2 | 5.1 | 18 | 22.2 | 26 | 31 | 7.7 | 4.5 | 17 | |
| Ticho | 7.49 | 39.32 | 12.8 | 10.2 | 1 | | | | | | | |
| Homi | 9.37 | 37.14 | 12.5 | 6.3 | 19 | | | | | | | |
| Sheno | 9.33 | 39.3 | 11.7 | 11.7 | 16 | 19.1 | 20 | 1 | 7 | 4.7 | 8 | |
| Ameya gindo | 7.05 | 36.11 | 11.4 | 6.3 | 19 | | | | | | | |
| Sululta | 9.1 | 38.43 | 11.3 | 11.3 | 18 | 24.3 | 26.5 | 16 | 7 | 3.5 | 8 | |
| Kula | 8.38 | 39.25 | 10.7 | 9.7 | 18 | 23 | 24.4 | 31 | 5 | 0.5 | 13 | |
| Med. school | 8.09 | 38.49 | 10.2 | 6.6 | 18 | | | | | | | |
| Abissinia school | | | 9.4 | 5.8 | 19 | | | | | | | |
| Bako | 5.45 | 38.09 | 9.3 | 5.3 | 21 | 34.4 | 39.1 | 11 | 10.7 | 10.2 | 13 | |
| Biloboshe | 8.53 | 36.59 | 9.2 | 5.3 | 17 | | | | | | | |
| Welliso Gion | 8.515 | 37.96 | 8.7 | 4.5 | 19 | 27 | 29 | 29 | 14 | 10.6 | 29 | |
| Guhastion | 10.00 | 38.15 | 7.1 | 5 | 20 | 24 | 25.1 | 14 | 11 | 8.2 | 4 | |
| Ayer tena | 9.02 | 38.45 | 6.7 | 4.2 | 1 | 24 | 25.2 | 18 | 10 | 8.4 | 31 | |
| Sibusire | 8.02 | 36.52 | 6.2 | 3.5 | 21 | 30 | 32.2 | 31 | 13 | 11 | 1 | |
| Assela | 7.57 | 39.08 | 6.1 | 4 | 20 | 22 | 23.5 | 20 | 8 | 5 | 27 | |
| Kimoye | 9.02 | 38.21 | 4.6 | 4.5 | 19 | 26.5 | 28.6 | 31 | 9.5 | 6.2 | 13 | |
| Tefki | | | 4.2 | 4.2 | 16 | 27.3 | 29.5 | 30 | 7.4 | 3.5 | 13 | |
| Kotebe(met) | | | 3.0 | 2 | 20 | | | | | | | |
| Bedesa | 8.92 | 40.77 | 2.2 | 2.2 | 22 | 28 | 30.2 | 18 | 11 | 4.4 | 13 | |
| Kality | | | 0.6 | 0.6 | 12 | 25 | 25.7 | 9 | 6 | 3.7 | 1 | |
| Addisealem | 9.03 | 38.24 | 0.4 | 0.4 | 17 | 25 | 27.3 | 31 | 8 | 5 | 25/ | |
| Habe | | | 0.1 | 0.1 | 17 | 23 | 24.3 | 31 | 3.4 | -1.1 | 14 | |
| Adama | 8.52 | 39.54 | 0.0 | | | 26.7 | 28.9 | 19 | 14 | 8.5 | 14 | |
| Arata | 7.56 | 39.02 | 0.0 | | | 27.6 | 31.3 | 27 | 10.7 | 6.1 | 26 | |

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| | | | | | | | | | | | | |
|--------------|------|-------|------|------|----|------|------|----|-----|-----|------|--|
| Awash melka | 8.42 | 38.36 | 0.0 | | | | | | | | | |
| Arerty | 8.5 | 39.27 | 0.0 | | | | | | | | | |
| Asgory | | | 0.0 | | | | | | | | | |
| Bele | 7.05 | 37.35 | 0.0 | | | 23 | 31.5 | 10 | 11 | 9 | 6 | |
| Bofa | 8.27 | 39.3 | 0.0 | | | | | | | | | |
| Cheffedonsa | 8.97 | 39.13 | 0.0 | | | 24.5 | 28 | 20 | 9.1 | 5.3 | 13 | |
| Egere | 9.52 | 38.2 | 0.0 | | | | | | | | | |
| Huruta | 8.08 | 39.2 | 0.0 | | | 24 | 27.1 | 19 | 10 | 5 | 8 | |
| Humbole | 8.37 | 38.77 | 0.0 | | | | | | | | | |
| Indato | 7.34 | 39.54 | 0.0 | | | | | | | | | |
| Kuni | | | 0.0 | | | | | | | | | |
| Kokadam | 8.38 | 39.25 | 0.0 | | | 31 | 35.5 | 31 | 12 | 7.5 | 13 | |
| Mojo | 8.37 | 39.09 | 0.0 | | | 28.6 | 31.5 | 18 | 9 | 4.5 | 14 | |
| Meki | 8.09 | 38.48 | 0.0 | | | | | | | | | |
| Sire | 7.13 | 38.6 | 0.0 | | | | | | | | | |
| Seru | 7.44 | 40.1 | 0.0 | | | 20 | 22.5 | 21 | 8 | 5.5 | 13 | |
| Tulubolo | 8.39 | 38.12 | 0.0 | | | 25 | 27 | 8 | 9 | 6.2 | 5 | |
| Wellenchiti | 8.39 | 39.25 | 0.0 | | | | | | | | | |
| Zuqala | 8.53 | 38.87 | 0.0 | | | | | | | | | |
| Tikurinchini | 8.65 | 38.23 | 80.5 | 18 | 18 | 23.5 | 26 | 30 | 6.8 | 2.5 | 1,11 | |
| Ifabiya | 9.16 | 37.07 | 77.6 | 18.4 | 12 | | | | | | | |
| Ginchi | 9.03 | 38.12 | 45.5 | 23.5 | 21 | | | | | | | |
| Tokkerensa | 8.58 | 37.41 | 37.7 | 13.2 | 16 | | | | | | | |

Ibsa:

RD:-Rooba dimishasha ji'a (total rian).

RBOA:-Rooba baay'ee ol anaa(extern) .

GTOA:-Giddu galeessa tempiirecharaa ol anaa (mean maximum temperature).

TBOA:-Tempiirecharaa baay'ee ol anaa (extreme maximum temperature).

GTGA:- Giddu galeessa tempiirecharaa gaddii anaa (mean minimum temperature).

TBGA:- Tempiirecharaa baay'ee gaddii anaa (extreme minimum temperature).

RI :- Rooba idiile (percent of normal)