

## Breeding, Variety Release & Maintenance

Country: Ghana

	Profile Element	Response
1	Focus crops for assessment	Maize, Rice, Soyabean and Groundnut
2	National public institutions (stations) in charge of breeding work for focus crops	CSIR-Savanna Agricultural Research Institute (SARI), CSIR-Cops Research Institute, WACCI and all public universities.
3	Number of qualified and active public breeders for each focus crop	Information on CSIR-SARI staff: Maize: 2, Rice: 1, Soyabean: 2, groundnut: 1
4	Number and focus of scientists from support disciplines (such as agronomy, entomology, etc.) that support breeding for each focus crop	Information on CSIR-SARI staff: agronomist: 5, weed scientist: 2, socio-economist: 3, entomologist: 3, soil scientist: 2, biometrician: 1, Genetic resources expert: 1
5	Private entities with breeding programs for focus crops in the country	Legacy Crop Improvement Program (LCIC)
6	Institutions/agencies in charge of variety testing and release	Research institutions and public universities are in charge of variety testing; Plant Protection and Regulatory Services Directorate (PPRSD) and the National Variety Release and Registration Committee (NVRRC) are in charge of variety release.
7	Average time to release a variety (note TASAI or other source)	9.2 months (TASAI)
8	Availability of documented variety release data, including DUS and NPT/VCU	Documentation on variety release data including DUS and NPT/VCU on every variety released in the country is available. It is mandatory for an institution nominating a variety to be released to prepare and submit a dossier (release data, including DUS and NPT/VCU) on the variety to the NVRRC for assessment before the variety is recommended for official release.
9	Extent of on-farm testing program (indicate #farms x #varieties x #reps)	At least two seasons of on-farm testing of a variety is required for a variety to be released.

10	<p><b>Focus crop varieties released in the last 10 years and commercialization status of each (none, emerging, expanding, stalled, full)</b></p>	<p>Maize: Aseda: none, opeaburoo: expanding, Kpari-Faako: expanding, Tintim:emerging, sanzal-sima: expanding, Ewul-boyu: stalled, Wang-dataa: expanding, Bihilifa: expanding, Salinkawana: emerging, Denbea: emerging, Wang-Basig: emerging, Similenu: emerging, Tigli: none, Sika-aburoo (pan 53): expanding, Kunjor-wari: expanding, Suhudoo: emerging, Warikamana: none, Afriyie: none, Obotantim: none, Nkabom: none, Dzifo: none, Ahocfe: none, Ahocdzin: none, Nkunim: none, Gyemedi: emerging, homanpa: none, onwanwa: none, Odomfa: none, Obaapa: none, Abeefo Aburo: emerging, Aburo legon: emerging, Akafo buro: emerging, Kpariyura: none, SARIMAZ!: none, Kum-naaya: none, Nkomo: none, Akomapa: none, Hwefoc: none, Nkwagye: none, Abebe: none, Apraku: none; Rice: , Paired: none, Obeng-Antwi: none; Rice: AGRA rice: full. Dartey: none, Kantinka: none, oboafu: none, Emopa: none, Mpuntuo:, Enapa: emerging, Legon rice1: none, Banse:m emerging, Malimali: emerging: Obolo: emerging, Yenyawaso: emerging, Oboshie: emerging, Otubia:, SARINUT1: emerging, SARINUT2: emerging, PION: none, Abakan: none, agbeyeye: none, Dehyee: none: Soyabean: Afayak: expanding, Songda: none, Sung-pungun: none, Gyidie: none, Latara: none, Favour: expanding, Toondana: none, Anigy3: none</p>
11	<p><b>List and year of release of varieties accounting for 80% of crop volume, by focus crop</b></p>	<p>Obatanpa: 30 years; sanzal-sima: 10, wang-dataa: 10 years; Omankwa: 12 years; Abontem: 12 years; AGRA rice: 9 years, Gbewa(jasmine 85): 13 years; Soyabean: Afayak: 10 years, Favour: 4 years, Jenguma: 19 years</p>
12	<p><b>Average life of a variety in the market</b></p>	<p>Maize: 12 years, rice: 8 years, soyabean: 8 years</p>
13	<p><b>Status of Plant Variety Protection (PVP) Act</b></p>	<p>Plant breeders bill passed.</p>
14	<p><b>Functionality of variety licensing program(s)</b></p>	<p>Variety licensing programs are not functional.</p>
15	<p><b>Functionality of royalty collection programs</b></p>	<p>No royalty program exists for varieties released by public institutions.</p>
16	<p><b>Allocation of royalties collected back to breeding program(s)</b></p>	<p>No royalties are paid to breeding programs.</p>
17	<p><b>Infrastructure in place to support public breeding work --cold rooms, irrigation, land (resilience screening, green houses), modern labs, etc.</b></p>	<p>Poor access to irrigation facilities, obsolete labs and green houses, non-functional cold rooms, poor access to well-prepared research field appropriate for variety phenotyping.</p>

<b>18</b>	<b>Status/condition of national gene bank</b>	The CSIR-Plant Genetic Resource Research Institute in charge of the national seed bank is not adequately resourced to carry out its mandate efficiently.
<b>19</b>	<b>Major innovations that have impacted the program in the last 5 years</b>	Marker-assisted breeding
<b>20</b>	<b>Key variety access and licensing information available on government website(s)</b>	Catalogue of crop varieties released in the country is available online. There is no information on variety licensing.
<b>21</b>	<b>Learning events or joint activities between breeders and private sector in the last two years</b>	Breeders and private seed producers (NASTAG) collaborate on variety testing (on-farm), Variety promotion and seed production activities.
<b>22</b>	<b>Program's total budget for each of the last 5 years</b>	Estimated budget of USD 40,000.00 per program per year
<b>23</b>	<b>Proportion of the budget spent on the following: salaries/breeding/testing/other (total should add up to 100%)</b>	70%: salaries; 10%: breeding, 15%: variety testing, 5%: others