



UNIVERSITAS
MUHAMMADIYAH
SIDENRENG RAPPANG



SUSTAINABLE
DEVELOPMENT
GOALS

SDG 15 Life on Land Progress Report 2025

Universitas Muhammadiyah Sidenreng Rappang

Reporting period 1 January to 31 December 2025

Prepared 29 October 2026

15 LIFE
ON LAND



*Melindungi, Memulihkan
dan Mengelola Ekosistem
Darat untuk Keanekaragaman
Hayati dan Kehidupan
yang Berkelanjutan*

UNIVERSITAS MUHAMMADIYAH
SIDENRENG RAPPANG



SDG 15 Life on Land

Progress Report 2025

Universitas Muhammadiyah Sidenreng Rappang

Reporting period 1 January to 31 December 2025

Prepared 29 October 2026

Executive overview

UMS Rappang's public record for 2025 documents freshwater invasive-species research publication and communication, mangrove ecosystem learning and practical agricultural education. Organic-waste bioconversion training provides a supporting connection to soil-resource management. The university also disseminates externally authored work through its journal platform, including a botanical garden study published in 2025.

Evidence area	Contribution covered
Freshwater biodiversity	Research on invasive sailfin catfish in Lake Sidenreng
Forest and wetland learning	Tongke-Tongke mangrove ecology field visit
Agricultural land skills	Precision fertilisation, Carawali land preparation and BSIP internship
Soil-resource awareness	Bioconversion training with potential organic fertiliser use
Knowledge dissemination	Botanical garden research published in a UMS Rappang journal

Main conclusion

The strongest direct SDG 15 links concern knowledge about invasive species in an inland freshwater ecosystem and field learning about mangrove habitat. Agricultural activities demonstrate skills development with potential relevance to soil management. The selected sources do not establish restored hectares, verified improvements in soil condition, increased native-species abundance or a university-wide biodiversity management programme.

Purpose and status

This report provides seven detailed evidence areas with six source photographs, a cropped research title and clickable links. It distinguishes completed learning activities, published knowledge and potential environmental benefits. It was prepared in 2026 for the 2025 reporting period and requires institutional factual review before public release. It does not establish publication of this report during 2025.

Scope and evidence approach

Coverage includes selected educational activities, community outreach and scholarly outputs associated with UMS Rappang. Sources include official university news, an external contemporary news account, journal PDFs and publisher metadata. Sources were reviewed on 29 October 2026. This is an evidence-based account of selected contributions, rather than a census of campus biodiversity or a land-condition audit.

Meaning of SDG 15 in this report

SDG 15 addresses terrestrial and inland freshwater ecosystems, forests, land degradation and biodiversity. Relevant directions are target 15.1 on ecosystems, target 15.2 on forests, target 15.3 on degraded land and soil, target 15.5 on habitats and species, and target 15.8 on invasive alien species. The links below are thematic interpretations and do not measure UN national indicators. [\[13\]](#)

Evidence category	Reporting rule
Freshwater research	Inland lakes fall within the goal’s ecosystem scope; publication year is separated from sampling year.
Mangrove field education	Habitat learning is distinguished from restoration, reforestation or protected-area management.
Agricultural activity	Cultivation and fertilisation are not automatically evidence of land restoration or biodiversity protection.
Bioconversion outreach	Training about organic fertiliser does not prove an improvement in soil health.
Journal publication service	Externally authored research is attributed to its actual authors; the university’s role is dissemination.

Dates and attribution

The BAWAL paper was published in 2025 but reports sampling in October–November 2024. The March 2025 university news about gill-net research refers to a 2024 AACL Bioflux article. Both support a 2025 publication or communication contribution, with earlier research dates retained. They are not counted as new 2025 field experiments. [\[8\]](#), [\[10\]](#)

Research supporting freshwater invasive species management

Lake Sidenreng | Research publication and communication in 2025

A BAWAL paper accepted for publication on 25 August 2025 lists Devi Permatasari, Hasrianti and Damis with UMS Rappang affiliations. It analyses reproduction in 164 female sailfin catfish, reporting an estimated length at first gonadal maturity of 214.12 mm. The methods date sampling and laboratory work to October–November 2024. This is a 2025 scientific output using earlier data. [\[9\]](#)



Figure 1. Fish photograph accompanying the university news about invasive sailfin catfish research. Source [\[8\]](#); not evidence of a 2025 sampling date.

Contribution to SDG 15

The work supplies biological knowledge relevant to invasive-species management under target 15.8 and freshwater ecosystem conservation under target 15.1. It informs questions about control strategies but does not establish a sustained fall in the lake-wide population or recovery of other species.

Research communication and interpretation

University news dated 22 March 2025 also describes gill-net research with IPB. The underlying AACL Bioflux article is dated 2024. Its 94% figure describes the share of sailfin catfish in the reported catch, not a 94% reduction in the lake population. Before recommending wider use, partners should assess selectivity, non-target catch and ecosystem outcomes. Retain publication records and any dated records of management application. [\[8, 10\]](#)

Mangrove ecosystem education at Tongke Tongke

Fisheries Science programme | Visit 23 November 2025 | News 1 December 2025

Students visited the Tongke-Tongke mangrove area in Sinjai for Aquatic Ecology and Aquatic Productivity practical learning under lecturer Damis. The report describes observations of vegetation zonation, substrate, tree density and natural regeneration, as well as associated aquatic life and water-quality measurements. Discussion with managers addressed community conservation and pressures on the habitat. [\[1\]](#)



Figure 2. Photograph published with the Tongke-Tongke field-learning report. Source [\[1\]](#).

Contribution and documented output

The activity helps students connect forest and wetland ecology with field observation. Its SDG 15 relevance concerns ecosystem and habitat knowledge under targets 15.1, 15.2 and 15.5. The same coastal setting is relevant to SDG 14; reporting across goals should retain one activity identity rather than duplicate participant totals.

Outcome boundary and follow up

The account does not establish tree planting, university-led restoration, an increase in forest area or improved species status. Field guides, attendance, observation sheets and assessed student reports would strengthen the evidence of learning. A future monitoring arrangement could identify fixed observation sites and repeatable methods with site managers. Any subsequent restoration activity should have its own baseline, intervention description and follow-up record.

Learning about precision nutrient management

Agrotechnology MBKM programme | University report 18 November 2025

The Agrotechnology programme reported students practising fertilisation during MBKM placements. Supervisor Nining Triani Thamrin describes nutrient-map-based practice on vegetable land, with attention to identifying local nutrient deficiencies or excesses and adjusting recommendations to conditions. The account frames the activity as practical learning in land management. [\[2\]](#)



Figure 3. Original image published with the university report on precision fertilisation practice. Source [\[2\]](#).

Relevance to land stewardship

Understanding how nutrient recommendations relate to local conditions can support more informed agricultural decisions. This is an enabling contribution potentially related to the soil-management direction of target 15.3. It does not establish restoration of degraded land, reduced fertiliser use or lower nutrient losses. The underlying map, sampling procedure and applied rates are not supplied in the news account.

Assessment and evidence needs

Programme records should confirm the site, placement dates, participating students and the technical exercise completed. Retain the nutrient map, test results, recommendations and supervisor assessment. Learning assessment can examine whether students interpret variation and justify management choices. Environmental evaluation would need suitable soil measurements and documented practice over time; a single practical session cannot establish improved soil condition.

Community based land management learning in Carawali

Agrotechnology programme / University report 21 October 2025

Agrotechnology students carried out land preparation in Carawali through MBKM and a village support programme focused on household food security and agricultural entrepreneurship. The report names Nining Triani Thamrin as supervisor and describes engagement with village government and community learning about agricultural land management. [\[3\]](#)



Figure 4. Photograph accompanying the university account of land preparation in Carawali. Source [\[3\]](#).

Contribution and interpretation

The activity establishes a practical university–community learning setting. Its strongest documented purpose concerns agricultural skills and food security. It can support future land-stewardship work if soil protection, habitat retention and suitable land use are incorporated and documented. Its relationship to target 15.3 is therefore conditional, rather than evidence that degraded land has already been restored.

Records and evaluation

Retain the activity date, site boundary, prior land use, participation record and practical learning outputs. Preparation of a plot alone does not establish its original condition or environmental effect. Further reporting should explain management choices and assess whether these support soil protection. Site-specific records could include soil condition, vegetation retained, ground cover and maintenance, alongside the programme’s food-production objectives. These are proposed evaluation fields, not established 2025 results.

Agronomic skills through the BSIP internship

BSIP Aneka Umbi Lanrang | University report 22 March 2025

Agrotechnology interns practised fertilisation of sweet potato at the BSIP Aneka Umbi Lanrang display garden. The university report identifies Beta 1, Beta 2 and Beta 3 varieties and supervision by technician Wahyu Triadi Kamaruddin. Guidance addressed fertiliser application in relation to crop needs. [\[4\]](#)



Figure 5. Photograph published with the report on sweet-potato maintenance at the BSIP display garden. Source [\[4\]](#).

Contribution to practical land knowledge

The placement provides supervised experience in crop husbandry and connects higher education with an agricultural technical institution. Its contribution to SDG 15 is indirect: relevant agronomic skills may help inform soil-management decisions when environmental safeguards and monitoring are included. Handling three named varieties is not evidence of genetic-resource conservation or fair access and benefit-sharing under target 15.6.

Evidence needed for stronger reporting

Retain the placement agreement, practical log, fertiliser type and rate, supervisor evaluation and relevant crop observations. Comparative outcomes require a defined method and suitable records. The account does not quantify changes in soil fertility, fertiliser efficiency or land degradation, so these outcomes are not claimed. Later reports should link technical learning to verified management decisions rather than infer environmental improvement from participation alone.

Bioconversion outreach and potential soil resource use

Kulo village / University report 29 July 2025

A UMS Rappang PKM PMM team led by Muhammad Bibin introduced organic-waste bioconversion using Black Soldier Fly larvae in Kulo. The account describes teaching about rearing structures, maintenance and harvesting, with larvae as feed and residue known as kasgot as an organic fertiliser product. [\[5\]](#)



Figure 6. Outreach photograph accompanying the university news about bioconversion education in Kulo. Source [\[5\]](#).

Contribution and boundaries

The outreach establishes community education about material recovery. Potential use of the residue in soil management connects indirectly with the land and soil direction of target 15.3. The activity is also relevant to SDG 12, but does not demonstrate soil restoration, reduced pressure on forests or biodiversity gains. No verified quantity of waste processed or fertiliser applied is supplied.

Follow up and assessment

Retain the training materials, attendance and any subsequent operating records. If fertiliser use is pursued, document product characteristics, application method and relevant soil or crop observations before drawing benefit claims. Future evaluation should distinguish people trained, units operating, material processed and environmental outcomes. Testimonials about possible income do not replace measured results, and continued support described as a plan should be reported separately from completed delivery.

Dissemination of botanical garden research

Jurnal Sains Agribisnis | Article published 25 December 2025

The UMS Rappang-published *Jurnal Sains Agribisnis* carried a study of agro-ecotourism potential at Pucak Botanical Garden in Maros. The article identifies all four authors with Universitas Islam Makassar. Its methods describe work in May–June 2025. The university's documented role in this case is providing the publication platform, rather than conducting or managing the garden study. [\[7, 11, 12\]](#)

STUDI POTENSI AGRO EDUWISATA KEBUN RAYA PUCAK KABUPATEN MAROS

STUDY OF AGRO-ECOTOURISM POTENTIAL OF PUCAK BOTANICAL GARDEN, MAROS REGENCY

Andi Tenri Angka¹⁾, Majdah M. Zain²⁾, Helda Ibrahim³⁾, Syamsul Rahman⁴⁾

^{1), 2,3,4)}Universitas Islam Makassar, Jl. Perintis Kemerdekaan KM 9, Tamalanrea Indah, 90245

Figure 7. Cropped research title and author affiliations from the original PDF, page 214. Source [\[7\]](#).

Contribution to ecosystem knowledge

The paper considers the garden's biodiversity and educational potential alongside management and community-participation constraints. Dissemination makes this discussion available for scholarship and learning, with thematic relevance to ecosystem and biodiversity awareness under targets 15.1 and 15.5. Publication does not establish that UMS Rappang operates the garden, conserved species there or implemented the proposed model.

Attribution and evidence of use

Retain the article record, full text, DOI and journal publisher statement. Any subsequent use in a university course, public discussion or partner project should have its own dated record. The study must remain attributed to its authors and institution. It should not enter a count of UMS Rappang-authored research or institution-managed conservation sites merely because it appears on the university's journal domain.

Assessment of progress and evidence gaps

The selected sources document contributions at the level of knowledge, educational delivery and dissemination. They offer a basis for more systematic reporting, while leaving ecological outcomes largely unmeasured. The assessment below separates direct topic relevance from activities that could support future land stewardship.

SDG direction	Evidence reviewed	Supported conclusion
15.1 Ecosystems	Freshwater research and mangrove field learning	Scientific knowledge and learning contribution; no measured ecosystem recovery.
15.2 Forests	Mangrove observations and conservation dialogue	Forest-related education; no university reforestation or forest-management result established.
15.3 Land and soil	Agronomic practice and bioconversion education	Enabling skills; no verified restored area or soil improvement.
15.5 Biodiversity	Invasive-species knowledge, habitat learning and journal dissemination	Relevant knowledge provision; no species-status improvement measured.
15.8 Invasive species	Sailfin catfish studies and research communication	Management-relevant research; no lake-wide control outcome established.
Other target areas	No specific evidence in the selected records	No claim about mountain protection, wildlife trafficking, genetic benefit-sharing or biodiversity finance.

Quantitative interpretation

The 164 fish in the BAWAL paper are research specimens from 2024, not a 2025 control programme total. The estimated maturity length is a biological result, not a management performance indicator. No combined beneficiary count is reported because participants may overlap across programmes and several sources provide no totals.

Institutional data still needed

A fuller SDG 15 account would require a campus and partner-site biodiversity inventory, mapped land boundaries, dated conservation measures and repeated environmental observations. The absence of these records from the selected public sources does not prove that the university has no such work; it limits the claims this report can support.

Monitoring priorities and recommended actions

These proposals are intended for institutional review. They are not approved commitments or achieved 2025 results. A practical monitoring approach should begin with the sites and programmes the university actually manages or supports.

Priority	Proposed measure	Evidence to retain
Freshwater biodiversity	Research outputs and documented use in management	Final publications, partner decisions and follow-up surveys
Invasive species	Standardised occurrence or catch records and non-target effects	Sampling protocol, effort, species identification and monitoring data
Forest learning	Unique participants and demonstrated field skills	Attendance, field sheets and assessed reports
Agricultural soils	Site-specific condition and management change	Baseline, soil tests, inputs, ground cover and repeat observations
Bioconversion	Operating units and measured material flows	Training record, weight logs and product-use records
Institutional biodiversity	Verified habitat and species register	Mapped boundaries, survey methods and dated observations

Suggested implementation sequence

First, ask the responsible academic programmes to validate the dates, roles and outputs in this report. Second, consolidate each distinct project under one activity identifier, including contributions reported under other SDGs. Third, attach the underlying field and research records. Finally, choose a limited set of ecological measurements that can be repeated reliably and interpreted with relevant partners.

Publication and accountability

Before publication, complete factual review, image-attribution checks and institutional approval through the university's normal process. The public report page should identify the actual release date and preserve accessible evidence links. Later additions should distinguish new findings from the original 2025 record and retain a clear version history.

Evidence register for activities

Sources reviewed on 29 October 2026. The six photographs are reproduced from the cited news pages and retain their source context. News publication dates are shown where exact activity dates are not stated.

Source 1 Ajatappareng Online

Mahasiswa Prodi Ilmu Perikanan UMS Rappang Kunjungan Edukasi ke Hutan Mangrove Tongke-Tongke Sinjai. 1 December 2025; visit dated 23 November 2025.

[Open evidence source](#)

Source 2 UMS Rappang

Mahasiswa Agroteknologi UMS Rappang Praktikkan Pemupukan Presisi dalam Kegiatan MBKM. 18 November 2025.

[Open evidence source](#)

Source 3 UMS Rappang

Mahasiswa Agroteknologi UMS Rappang Persiapkan Lahan di Desa Carawali. 21 October 2025.

[Open evidence source](#)

Source 4 UMS Rappang

Magang Mahasiswa Agroteknologi UMS Rappang Optimalisasi Pemupukan Ubi Jalar di Kebun Display BSIP. 22 March 2025.

[Open evidence source](#)

Source 5 UMS Rappang

Dosen Ilmu Perikanan UMS Rappang Perkenalkan Teknologi Biokonversi Sampah Organik dengan Maggot BSF. 29 July 2025.

[Open evidence source](#)

Source 8 UMS Rappang

UMS Rappang dan IPB Temukan Solusi Cerdas Atasi Ikan Sapu-Sapu di Danau Sidenreng. 22 March 2025; research communication about an earlier publication.

[Open evidence source](#)

Research sources and reference framework

Source 9 Permatasari and colleagues

Estimating the Size of Sailfin Catfish at First Gonad Maturity in Sidenreng Lake. BAWAL 17 number 2, 2025, pages 111–122. DOI 10.15578/bawal.17.2.2025.111-122. Sampling October–November 2024.

[Open evidence source](#)

Source 10 Hasrianti and colleagues

Height and mesh size of gill nets to reduce sailfin catfish population. AACL Bioflux 17 number 6, 2024, pages 3128–3141. Earlier research underlying the March 2025 news.

[Open evidence source](#)

Source 7 Angka and colleagues

Study of Agro-Ecotourism Potential of Pucak Botanical Garden Maros Regency. Jurnal Sains Agribisnis 5 number 2, 2025, pages 214–226. DOI 10.55678/jsa.v5i2.2197. Full-text source for the title crop.

[Open evidence source](#)

Source 11 Jurnal Sains Agribisnis

Botanical garden article metadata. Published 25 December 2025; identifies the authors with Universitas Islam Makassar.

[Open evidence source](#)

Source 12 Jurnal Sains Agribisnis

About the Journal. Identifies UMS Rappang as publisher and the Agribusiness programme as organiser.

[Open evidence source](#)

Source 13 United Nations

SDG 15 targets and indicators. Framework for thematic mapping; no national indicator attainment is claimed.

[Open evidence source](#)