

## Zimparks Drone Pilots Utilising Drones for Wildlife Monitoring And Anti-Poaching Efforts In Mana Pools



RP Licenced ZimPark Rangers Monitoring Wildlife



Field Work: Fixed Wing Ground control station. Licenced Drone Pilot (Ecologist) inputting coordinates for mapping mission in Mana Pools National Park, Zimbabwe.

OVERVIEW	
<b>Flying Labs</b>	Zimbabwe Flying Labs
<b>Location</b>	Mana Pools, Zimbabwe
<b>Date</b>	January - May 2024

<b>Length (number of days)</b>	40
<b>Sector program (optional)</b>	<a href="#">EcoRobotics</a>
<b>Format</b>	In-Person
<b>Co-organizer if applicable</b>	UNDP and ZimParks
<b>SDGs</b>	<a href="#">OAL 13: Climate Action</a> <a href="#">GOAL 15: Life on Land</a> <a href="#">GOAL 17: Partnerships to achieve the Goal</a>

SCOPE & OUTCOMES	
<b>Type of training</b>	<ol style="list-style-type: none"> <li>1. Technical training of professionals</li> <li>2. Sector-specific training of professionals</li> </ol>
<b>Goal of the training</b>	<ol style="list-style-type: none"> <li>1. Develop drone data acquisition skills</li> <li>2. Develop drone data analysis skills</li> <li>3. Certify drone pilots</li> </ol>
<b>Expected outcome for participants</b>	<ul style="list-style-type: none"> <li>● To provide knowledge and training on how to operate a drone safely and responsibly.</li> <li>● To gain an understanding of local drone laws, regulations, and compliance standards.</li> <li>● To train and certify drone pilots from ZimParks on multirotor, fixed wing, BVLOS operations.</li> <li>● To train ZimParks drone pilots on how to effectively use drones for data capturing in GIS.</li> <li>● Applications, Remote Sensing, Aerial Mapping &amp; Data Processing.</li> <li>● To train ZimParks drone pilots on the application of Drones in conservation and anti poaching.</li> <li>● To develop the foundation for effective drone operations.</li> <li>● To train ZimParks drone pilots on airmanship and safe operational use of drones in national parks.</li> </ul>
<b>Confirmed outcome after training</b>	<p>The participants gained the following:</p> <ul style="list-style-type: none"> <li>● Remote Pilot Licence (RPL) Multirotor</li> <li>● Remote Pilot Licence (RPL) Fixed Wing rating</li> <li>● Beyond Visual Line Of Sight (BVLOS) rating</li> <li>● Drones application knowledge and skills in conservation &amp; wildlife</li> </ul>

	<ul style="list-style-type: none"> <li>Type-specific training on ZimParks' aircraft - Baby Shark.</li> </ul>
<b>Eventual next steps</b>	Create a system to monitor wildlife and anti-poaching efforts.

<b>PARTICIPANTS</b>	
<b>Profiles and number of participants</b>	<ul style="list-style-type: none"> <li>10 Staff from organisations (non-profit)</li> <li>2 Staff from the government (ministries, government service, etc.)</li> </ul>
<b>Name of participants' organisations</b>	<ul style="list-style-type: none"> <li>UNDP</li> <li>ZimParks</li> </ul>
<b>Gender ratio</b>	10 Male : 0 Female
<b>Who paid for the training?</b>	UNDP
<b>Participant fee rate (if applicable)</b>	Not applicable.
<b>Scholarships offered?</b>	Not applicable.

<b>CONTENT</b>	
<b>Training components</b>	<p>The modules covered during theory training were based on the syllabus approved by the Civil Aviation Authority of Zimbabwe as well as international best practices on RPA use. These included:</p> <ul style="list-style-type: none"> <li>Understanding the technical aspects of drone systems</li> <li>Flight regulations</li> <li>The importance of safety measures</li> </ul> <p>Theory training was conducted in class with quizzes, mock tests and a final theory exam to test knowledge retention.</p>
<b>Training resources used</b>	<ul style="list-style-type: none"> <li>Phantom 4</li> <li>Mavic 2s</li> <li>Foxtech AYK250</li> <li>Discovery</li> <li>PIX4Dmapper</li> </ul>
<b>Approaches and methods used</b>	ZimParks training aimed to bridge operational gaps, ensuring safe and responsible drone operations. The comprehensive curriculum encompassed theoretical insights, practical skills development, and an

	<p>ethical framework for deploying drones in wildlife conservation. The training was a hands-on experience in the safe and responsible operation of Multirotor and Fixed Wing drones. This included practical exercises to ensure that ZimParks staff could handle drones efficiently and safely.</p> <p>ZimParks operational team was trained on local drone regulations in Zimbabwe, ensuring that the ZimParks team was well-versed in the legal framework for Remotely Piloted Aircraft (RPAs). This knowledge is crucial for conducting drone operations within the law. ZimParks operations team were trained on the content and requirements of remotely piloted aircraft use in Zimbabwe as outlined in Statutory Instrument 271 of 2018 and related laws. The training offered comprehensive theoretical insights into drone technology, rules, and safety protocols.</p> <p><b>Practical Skills Development:</b> In-depth flight training was conducted with each team member from ZimParks with an estimated flight log time of no less than 20hrs for each participant by the end of the training, with a focus on developing practical skills for ZimParks staff in drone operations for general flying and conservation use cases. The training was done in flight planning techniques and data collection methodologies, ensuring staff can effectively plan and execute drone missions.</p> <p><b>Wildlife Conservation Focus:</b> The training deepened the understanding of drone applications in wildlife conservation and management. Participants learnt how to effectively utilise RPAs for wildlife monitoring, habitat assessment, and anti-poaching efforts.</p> <p><b>Troubleshooting Skills:</b> The training ensured pilot proficiency in addressing common technical challenges associated with drone operations. This includes troubleshooting issues related to drone hardware, software, and communication systems. Basic maintenance training will be conducted as part of the practical course.</p> <p><b>Ethics and Best Practices:</b> The training emphasised the ethical deployment of drones within wildlife management and conservation realms. This involved educating staff on ethical considerations, privacy concerns, and best practices to ensure responsible drone use. Specific topics on Drone ethics covered real-world scenarios and operational</p>
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	<p>situations.</p> <p>The training provided a holistic approach that combined theoretical knowledge with practical skills, ensuring that ZimParks staff not only understand the principles of drone operation but can also apply them effectively in the context of wildlife conservation and management. This aligns well with the consultancy's objectives and contributes to building a skilled and responsible drone operations team within ZimParks.</p>
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