

# Field Recording Approach of Traditional Music Arts for Ruwatan Bumi G20 Culture Performance: A Case Study in West Java

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## ABSTRACT

*This research investigates the field recording approach used in capturing three traditional arts in West Java—beluk, tarawangsa, and Ronggeng Gunung—for the Ruwatan Bumi performance, a pinnacle event of the G20 Culture Ministers Meeting and the Indonesia Festival Bertutur 2022. The study utilizes a qualitative descriptive approach, including observation, interviews, documentation, and literature review. Equipment considerations, such as portability, sound quality, and features, are crucial for field recording. The research highlights the importance of using high-quality microphones, such as the Rode NT4 and MXL 990, and portable recorders like the Zoom H6 and H1N. Specific recording techniques, such as the XY 90° stereo method, were employed to capture the nuances of each art form. The study contributes to the field of ethnomusicology by emphasizing the significance of a natural recording approach in preserving the authenticity of traditional music. Further research could explore other regions and musical traditions in Indonesia to enhance the documentation and preservation of intangible cultural heritage.*

**Keywords:** *Ruwatan Bumi, G20 Cultural, Field Recording*

## ABSTRAK

Penelitian ini mengkaji pendekatan perekaman lapangan yang digunakan untuk merekam tiga seni tradisional di Jawa Barat—beluk, tarawangsa, dan Ronggeng Gunung—untuk pertunjukan Ruwatan Bumi, sebuah acara puncak Pertemuan Menteri Kebudayaan G20 dan Festival Bertutur Indonesia 2022. Studi ini menggunakan pendekatan deskriptif kualitatif, termasuk observasi, wawancara, dokumentasi, dan tinjauan literatur. Pertimbangan peralatan, seperti portabilitas, kualitas suara, dan fitur, sangat penting untuk perekaman lapangan. Penelitian ini menekankan pentingnya menggunakan mikrofon berkualitas tinggi, seperti Rode NT4 dan MXL 990, serta perekam portabel seperti Zoom H6 dan H1N. Teknik perekaman khusus, seperti metode stereo XY 90°, digunakan untuk menangkap nuansa dari setiap seni. Studi ini memberikan kontribusi bagi bidang etnomusikologi dengan menekankan pentingnya pendekatan perekaman yang alami dalam melestarikan keaslian musik tradisional. Penelitian selanjutnya dapat mengeksplorasi wilayah dan tradisi musik lain di Indonesia untuk meningkatkan dokumentasi dan pelestarian warisan budaya tak benda.

**Kata Kunci:** Ruwatan Bumi, G20 Kebudayaan, Perekaman Lapangan

## INTRODUCTION

Ruwatan Bumi (earth purification) is the pinnacle event of the series of activities from the G20 Culture Ministers Meeting (CMM) or Pertemuan Tingkat Menteri Kebudayaan G20 and the Indonesia Festival Bertutur 2022 (Narrative Festival 2022), held at the Borobudur Temple complex in Magelang, Central Java, on September 11-13, 2022. The theme signifies the G20 member countries' commitment to re-focus on environmental issues. Through Ruwatan Bumi, diverse Indonesian community traditions that uphold cultural values in preserving the natural environment will be introduced. This is of utmost importance to maintain the harmonious relationship between humans, all living beings, and the natural environment (Redaksi, 2022).

Ruwatan Bumi itself draws its concept from the traditional Javanese ceremony called "ruwatan". The term "ruwatan" originates from the Javanese word "ruwat", which means to be freed. The purpose of the ruwatan ceremony is to seek liberation from danger (Darmoko, 2002). In the context of the G20 Culture, Ruwatan Bumi gathers various indigenous communities of the Nusantara (Indonesian archipelago) to partake in a procession of gratitude and seek protection for the preservation of the Earth. Involving 27 indigenous communities, four indigenous leaders, female artists from different regions in Indonesia, and representatives of artists from G20 member countries, Ruwatan Bumi features prayers, songs, dances, and musical accompaniments that last for 1.5 hours and are presented live (Maulipaksi, 2022).

To present the songs, prayers, and music optimally, high-quality recordings are essential. Recording plays a crucial role in the pre-production stage of Ruwatan Bumi, as the recorded material will be used in the overall design of the performance, and subsequently during rehearsals before the show at the Borobudur Temple. An optimal recording is required to capture the artists' messages conveyed through vocals/music and to deliver them effectively. The composer will then design the performance flow based on these recordings.

As the sound director for the Ruwatan Bumi performance, the author plays several roles in supporting the show. Besides managing the sound during live performances, the author also conducts vocal and traditional musical instrument recordings in various regions of Indonesia. One of these recordings took place in West Java, specifically capturing the beluk art in Subang, the tarawangsa art in Cikalong Sumedang, and the Ronggeng Gunung art in Padoherang Ciamis. The recording of vocals and musical instruments was completed in a relatively short time, only three days. This situation raises several questions, including the equipment used for field recordings, the recording locations, the recording approach based on the characteristics of vocals/music, and the choice of microphones.

The research aims to describe the field recording approach used in capturing the beluk, tarawangsa, and Ronggeng Gunung arts in West Java for the Ruwatan Bumi performance. This research is important as it documents and preserves traditional Indonesian arts, highlighting their role in

promoting environmental awareness and cultural sustainability. It also contributes to the field of ethnomusicology by providing insights into the technical aspects of field recording in diverse cultural contexts, aiding researchers and practitioners interested in studying traditional music.-

## METHOD

A qualitative descriptive approach was used in this study to describe the field recording methods in three different traditional arts in West Java: Beluk in Subang, tarawangsa in Cikalong Sumedang, and Ronggeng Gunung in Padoherang Ciamis. The qualitative descriptive research design is suitable for explaining and describing a particular condition or issue (Ajimotokan, 2023; Kumar, 2011). Data collection involved observation, interviews, documentation, and literature review.

The research process comprised several stages: pre-field, field, and post-field. In the pre-field stage, initial data, including art identification documents and videos, were used to provide an overview of the vocal/music arts to be recorded. These documents were obtained from the internal Ruwatan Bumi team, which had already gathered brief information about the three arts, encompassing descriptions, geographical distribution, artists, repertoires, and YouTube video links. Some of the video links aimed to provide a general sense of what the arts in these three regions were like. However, the audio quality in these videos could not serve as precise references, as the exact recording locations would be

determined after field visits and observations.

Furthermore, discussions were held with the head of the Ruwatan Bumi composer team to establish the ultimate purpose of the field recordings. It was agreed that the recordings would follow a natural approach. The natural recording approach is a method aimed at creating an illusion of reality within an accurate localization context (Bartlet, 2014). Technically, natural recording is known as stereo recording, which involves using two or more microphones arranged in a specific microphone configuration.

During the field stage, observation and interviews were conducted. Observation involved observing how artists sang or played musical instruments. Field visits were conducted for each art, each lasting one day. Additionally, the study examined the musical instruments used, including playing techniques, sound sources, and playing positions. On the other hand, interviews were conducted to gather information about the songs performed or played.

In the post-field stage, the recorded material was played back to the artists to obtain their feedback on the recording quality. Furthermore, the recorded material was also shared with the head of the composer team and co-curator for their input. Through observation and interviews, the author also obtained more specific insights into artistic ideas, microphone types, and the number of channels required for the three arts during rehearsals and live performances.

## RESULT AND DISCUSSION

In principle, field recording requires equipment that is not different from studio recording. Figure 1 illustrates the digital recording flowchart. Microphones are connected to an audio interface, which functions to convert analog signals to digital (AD) and digital signals back to analog (DA). Subsequently, studio monitor/headphones, as the listening tool, are connected to the output of the audio interface.

Several important aspects need to be considered in determining field recording equipment, including:

- Portability and mobility: The equipment should be compact and easy to carry, with user-friendly settings. It should be capable of operating on battery power.
- Sound quality: Both the recording device and microphones must be capable of capturing sound with detailed and precise spectral and dynamic range.
- Features: The recording device should have built-in microphones, and a minimum of four input channels.

Furthermore, for microphone selection, several microphones should be prepared for use in both stereo recording methods and spot-based close-range recording. Spot-based close-range recording should be prepared to anticipate conditions in the field that are highly prone to change.

The portable recorder Zoom H6 was used as the recording device due to its four to six-channel input capabilities and its inclusion of an XY 90° stereo portable microphone. With a Equivalent Input Noise (EIN) performance of approximately -120 dBu

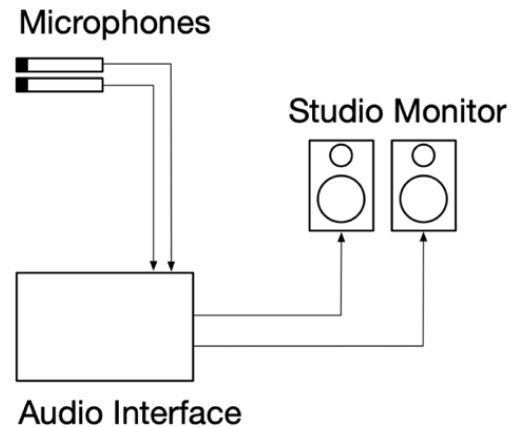


Figure 1. Digital Recording Flowchart  
(Source: Simanjuntak, 2023)

(Wildtrionics, 2022), the Zoom H6 qualifies as a recording device with relatively low noise, resulting in recordings of reduced noise levels. Higher EIN values would negatively impact recording quality, especially when capturing low-intensity or weak sound sources. Two types of microphones were employed: the Rode NT4 stereo condenser microphone and the cardioid polar pattern MXL 990 condenser microphone. The Rode NT4 serves a similar function to the Zoom H6's built-in stereo microphone capsule, but with significantly superior microphone quality. To ensure audio data redundancy, the Zoom H1N portable recorder was used, which offers more compact functionality compared to the Zoom H6. The Zoom H1N features an XY 90° stereo microphone with an EIN of approximately -112 dBu (slightly higher noise level compared to the Zoom H6) (Ovechkin, 2023). In addition to stereo recording methods, the author also prepared the MXL 990 cardioid condenser microphone for close-range recording. This method is utilized if recording intimate and closer impressions becomes necessary.

The equipment used for this field recording includes:

- Portable handheld recorder Zoom H6
- Portable handheld recorder Zoom H1N
- Stereo microphone Rode NT4
- Condensor microphone MXL 990
- Headphone Audio Technica M-40x
- SDcard 32 GB and 64 GB
- Stand microphone
- XLR cables
- Microphone windshield for Zoom H6, Zoom H1N, Rode NT4, dan MXL 990

## BELUK

Traditional art form of 'beluk' is a vocal performance characterized by high-pitched tones with intricate and winding ornamentations. According to Sukanda (1984), the term "beluk" is derived from 'melu,' which means producing high-pitched sounds with twisting melodic patterns. It is also explained that "beluk" is interpreted as 'gorowok' (shouting). This can be understood from the background of the Javanese community in West Java, which includes farmers. Due to the vast distances between fields, farmers needed to shout to communicate with each other (Sidhiq and Rizki, 2021). They would announce their positions in a field or forest to others by singing loudly and receive a response in the form of a singing reply from their counterparts. Initially, "beluk" was used for self-entertainment, but over time, it became a means of communication and an integral part of religious practices.



Figure 2. Beluk Maestro Wa Itok and Mang Ayi (A), Author's discussion with Mang Ayi (B) (Source: Simanjuntak & Habibullah, 2022)

The Ruwatan Bumi team, consisting of three members, met with two 'beluk' maestros, namely Mang Ayi (Ayi Ruhiyat) and Wa Itok (Dedi Junaedi) as shown in the Figure 2A. The field recording of 'beluk' was conducted in Sukadaya Village, specifically in Sukasari Village, Dawuan District, Subang Regency, West Java. Based on the interview with Mang Ayi, it was explained that they would perform ancient verses (*buhun*) containing advice, which began with 'rajah' (praises) for the ancestors as a symbol of respect to them. Mang Ayi and Wa Itok presented 'beluk buhun,' 'pantun beluk,' and 'beluk mider' (Figure 2B).

The recording took place in a hut situated amidst a rice field, approximately 100 meters behind the studio where the Ruwatan Bumi team and Mang Ayi met (Figure 3A). The choice of the hut as the recording location was intended to capture environmental geophonic and biophonic sounds, consistent with how "beluk" is typically presented. The recording approach utilized was the XY 90° stereo method. The stereo method was employed as Mang Ayi and Wa Itok would perform several verses simultaneously and in response to each other, requiring a recording outcome that conveyed a sense of 'unity' and spatiality.

The Rode NT4 stereo microphone was connected to the portable recorder Zoom H6. The microphones were placed on the central



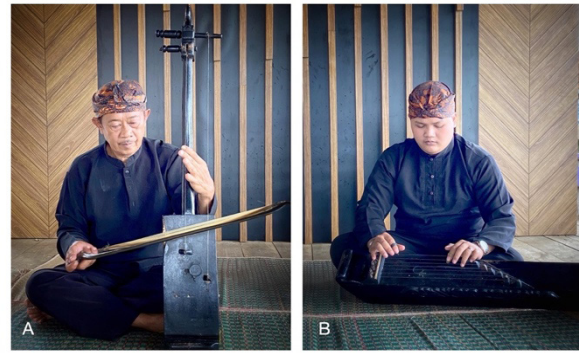


**Figure 3. Beluk Maestro Sitting Position (A) dan Top View of Microphone Placement Position (B)**  
(Source: Simanjuntak & Habibullah, 2022)

axis relative to the sitting positions of Wa Itok (1) and Mang Ayi (2), who were seated side by side with a distance of about 60-70 cm inside the hut (Figure 3B). The distance between the microphones and the axis of the maestros' sitting positions was approximately 1 meter, with a height of about 1 meter to align with the maestros' mouth level to the ground. Using a sample rate of 48 kHz and 24-bit depth, the recording was conducted from around 3:00 PM to 4:00 PM (WIB). The ambiance of the rice field, including sounds of frogs, insects, and wind, brought liveliness to the recording, although some distant vehicle noises were also captured by the microphones at a relatively low volume compared to the 'beluk' maestros' sounds. The author also made a backup recording using the Zoom H1N as a contingency measure. The Zoom H1N was placed in the same position as the NT4 microphone. Audio Technica M-40x headphones were used to monitor audio quality during the recording.

### Tarawangsa

Tarawangsa is a traditional art form distinctive to the community of Rancakalong in Sumedang, West Java, whose livelihood is primarily based on agriculture. The Tarawangsa ritual is a ceremony dedicated to



**Figure 4. Tarawangsa Musical Instruments (A) dan Jentreg Musical Instruments (B)**  
(Source: Simanjuntak, 2022)

honouring Nyi Pohaci (Goddess of Rice), as an expression of gratitude for the bountiful life bestowed by the Almighty. Tarawangsa is performed during the traditional Ngalaksa ceremony, symbolizing gratitude for the abundant rice harvest. Presently, Tarawangsa is also incorporated into various celebrations, expressions of thanksgiving, and even national grand celebrations (Admin\_BPK\_Wil\_IX, 2018).

Tarawangsa holds two meanings: firstly, it refers to a rectangular wooden musical instrument with strings made of steel wire, and secondly, it denotes the traditional art form. In the context of the art form, Tarawangsa is inseparable from the Ngalaksa ceremony that is still practiced by the community of Rancakalong in Sumedang. This ceremony typically involves the use of Tarawangsa instruments, often accompanied by jentreg (kacapi). The Tarawangsa instrument (Figure 4A) and jentreg (Figure 4B) always complement each other during ritual ceremonies in West Java, especially in Rancakalong.

In the context of musical instruments,



**Figure 5. Tarawangsa Maestro Sitting Position (A) dan Top View of Microphone Placement Position (B)**  
(Source: Simanjuntak & Habibullah, 2022)

Tarawangsa is a box-shaped bowed musical instrument with a single resonator hole. Typically made from Jengkol wood (*Pitheclibium jiringa*), Tarawangsa has two steel wire strings that span across the neck. One of the reasons for using Jengkol wood is its lightweight, easy carvability, and dense fibers. Similar to the rebab, Tarawangsa also has two strings. However, only the string closest to the player is bowed, while the second string is plucked (Desandra, 2020).

Based on discussions with the Tarawangsa maestro, Abah Abun (Figure 3A), in a performance, Tarawangsa and jentreng are usually positioned side by side. Hence, a stereo recording method is employed to capture width, depth, and distance impressions. These aspects are crucial to projecting the naturalness of the sound source in the recording. The XY 90° stereo technique is used for recording Tarawangsa to achieve a stereo image that is not overly wide and provides a warm ambiance impression (Bartlet, 2009). Previous research on traditional musical instruments in West Java has revealed that timbre and spatial aspects are two important subjective criteria for determining recording quality (Simanjuntak et al., 2018). To achieve this, the recording is not conducted in a room that

could produce reflections and echoes, and XY technique is used, placing two microphones at the same point in the microphone capsule (front) at a 90° angle. The aim is to eliminate any time differences in the signals from both sound sources to the microphone.

The Rode NT4 stereo microphone was used to achieve optimal recording quality, as it is a condenser microphone with a cardioid polar pattern. The microphones were positioned at the center between the sitting positions of the Tarawangsa and jentreng players, who were seated side by side at a distance of about 1 meter (Figure 5A). The microphones were placed approximately 1.5 meters away from the front line of Abah Abun (Tarawangsa player) and Yosef Fadilah (jentreng player) to avoid being directly on the axis of each instrument (Figure 5B-1; 5B-2), a position commonly known as off-axis. The purpose was to reduce the directivity of each musical instrument towards the microphone. The timbre of Tarawangsa and jentreng did not change significantly even when in the off-axis position.

The recording was conducted in an art studio not far from Abah Abun's house. The music performed was a prayer, mantra, and ritual dedicated to Nyi Pohaci as the goddess of fertility. To protect the microphone diaphragm from relatively strong wind gusts, foam or fur windshields were used since the studio was open without walls. The microphones were connected to the Zoom H6 recorder with a sample rate setting of 48 kHz and 24-bit depth.

Although the recording took place in a relatively low-noise area, about 500 meters from the main road, the sound of

distant motorbikes could not be entirely avoided, even though they were at a low volume. The sounds of water from a small ditch and chickens behind the Tarawangsa player became part of the recording, adding a natural ambiance to the Tarawangsa performance. In the post-production stage, it was challenging to remove the motorbike noise using audio editing software, whereas the water and chicken sounds were accepted as natural background noise in the recording. The results of the recording indicated that the off-axis positioning of both instruments helped reduce sharp impressions, particularly from the jentreng, which has a higher attack characteristic compared to the Tarawangsa. After the recording was completed, Abah Abun listened to the Tarawangsa and jentreng recordings. The natural expression of both musical instruments was well conveyed, particularly in terms of timbre. Some transients (sound attacks) from the jentreng were slightly loud but not overly disruptive.

### Ronggeng Gunung

Ronggeng Gunung is a traditional art form originating from the Ciamis Regency of West Java, which thrives in the mountainous areas surrounding Ciamis. Ronggeng Gunung serves not only as entertainment but also as a ritual accompaniment related to agriculture, particularly during rice cultivation in the fields (*tandur*), rice planting in the uplands (*ngaseuk*), transporting rice to the granary (*mapag sri*), and praying for rain (Lubis, 2015). Ronggeng Gunung features a lead singer (*juru kawih*) who also acts as a dancer, accompanied by three *nayaga* or gamelan players (Thresnawaty,

2016). The main characteristic of Ronggeng Gunung is its distinct vocal style, which is loud, high-pitched, and intricate (Lubis and Darsa, 2015). Mastering this technique is essential for delivering Ronggeng songs effectively.

Bi Raspi is a maestro of Ronggeng Gunung, dedicating himself to this art form since 1972. He established the Panggugah Rasa Ronggeng Gunung studio with the aim of preserving this cultural heritage and maintaining a permanent troupe to meet performance invitations. Based on field observations, Ronggeng Gunung performances utilize a sound system consisting of microphones, a mixer, and main speakers (PA). These findings indicate that they are accustomed to using close-miking techniques for both vocals and accompanying music (gamelan).

During the initial observation, Bi Raspi sang using a Shure SM58 dynamic cardioid microphone owned by the studio while dancing alongside his daughter, Nani Nurhayati, for approximately 5-10 minutes as shown in Figure 6A. The author positioned a Rode NT4 stereo microphone towards the speakers to record Bi Raspi's vocals and the *nayaga* (Figure 6B). After evaluating the recording results and discussing with the Ruwatan Bumi team, considering artistic aspects for the performance at Borobudur Temple in September 2022, it was decided to focus the recording solely on vocals, excluding the accompanying music. Therefore, a MXL 990 condenser microphone with a cardioid polar pattern was used to record Bi Raspi's vocal rendition of prayers, mantras, and rituals.

Due to physical limitations, Bi Raspi





**Figure 6. Early Recording of Ronggeng Gunung Maestro Bi Raspi (A) dan Microphone Placement Against Speaker (B)**

(Source: Simanjuntak & Habibullah, 2022)



**Figure 7. Maestro Ronggeng Gunung Bi Raspi Closed Miking (A) and Evaluation of Recording Results (B)**

(Source: Habibullah, 2022)



**Figure 8. Mixing Board and Effects at Sanggar Panggugah Rasa**

(Source: Simanjuntak, 2022)

was unable to sing while dancing. The vocal recording was conducted with Bi Raspi sitting on a sofa. The microphone was placed approximately 50-60 cm in front of Bi Raspi's mouth, with a height of around 80 cm from the floor (Figure 7A). The microphone needed to be positioned at this distance due to Bi

Raspi's relatively loud voice, which caused the recording to reach a distortion range (-10 dBFS to -5 dBFS) on the Zoom H6 level meter. This highlights that singing Ronggeng Gunung requires a powerful voice. After the recording was completed, the author requested feedback from Bi Raspi to ensure that the recording results met his preferences, as shown in Figure 7B. Overall, the recording results were in line with Bi Raspi's subjective criteria, and no re-recording was necessary.

Another interesting finding during the observation at Panggugah Rasa Studio is the existence of specific timbre criteria for Bi Raspi's vocal performance. Several reasons can explain this phenomenon. Firstly, there were already specific filter (EQ) settings applied to the vocal microphone channel for Bi Raspi when using the cardioid microphone Shure SM58. One of these settings involved a low-frequency attenuation of up to -10 dB on the mixer. This implies the need for a vocal sound that lacks low-frequency characteristics. Secondly, there was a specific reverb effect applied, utilizing a rack placed on the mixer support box (Figure 8). It can be concluded that both aspects play a crucial role in shaping the distinctive timbre of Bi Raspi's Ronggeng Gunung vocal performance.

## CONCLUSION

The aim of the present research was to examine the field recording approach used in capturing the beluk, tarawangsa, and Ronggeng Gunung arts in West Java for the Ruwatan Bumi performance. This study has shown that field recording in ethnomusicological

research requires careful consideration of equipment, recording techniques, and environmental factors to capture the essence of traditional musical performances accurately. The results of this study indicate that using a combination of portable recorders and high-quality microphones, such as the Zoom H6, Rode NT4, and MXL 990, can effectively capture the nuances of vocal and instrumental performances in diverse settings. The contribution of this study has been to confirm the importance of a natural recording approach in ethnomusicological research to preserve the authenticity of traditional music. A limitation of this study is that it focused on a limited number of traditional arts in West Java, and further research could explore other regions and musical traditions in Indonesia. The question raised by this study is how advancements in recording technology and techniques can enhance the documentation and preservation of intangible cultural heritage through field recordings.

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